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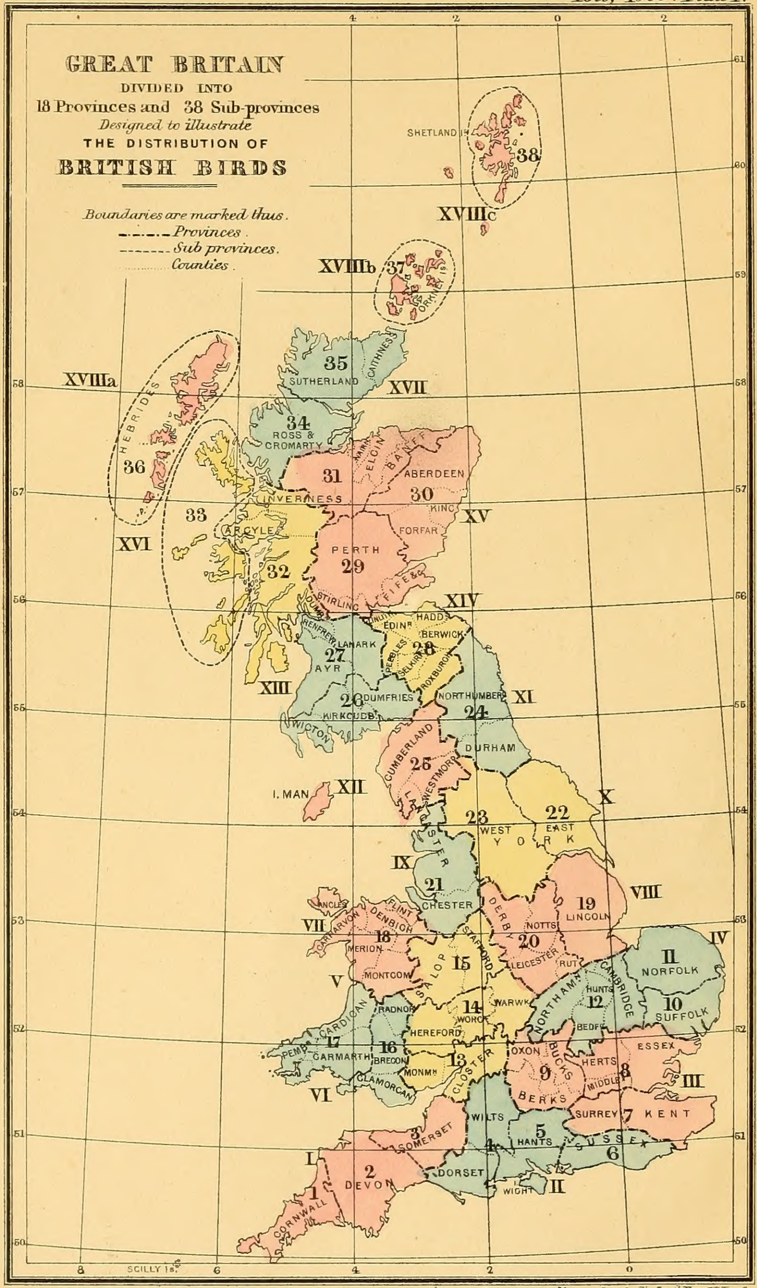
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Sub provinces.
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XVIIIb
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THE IBIS,

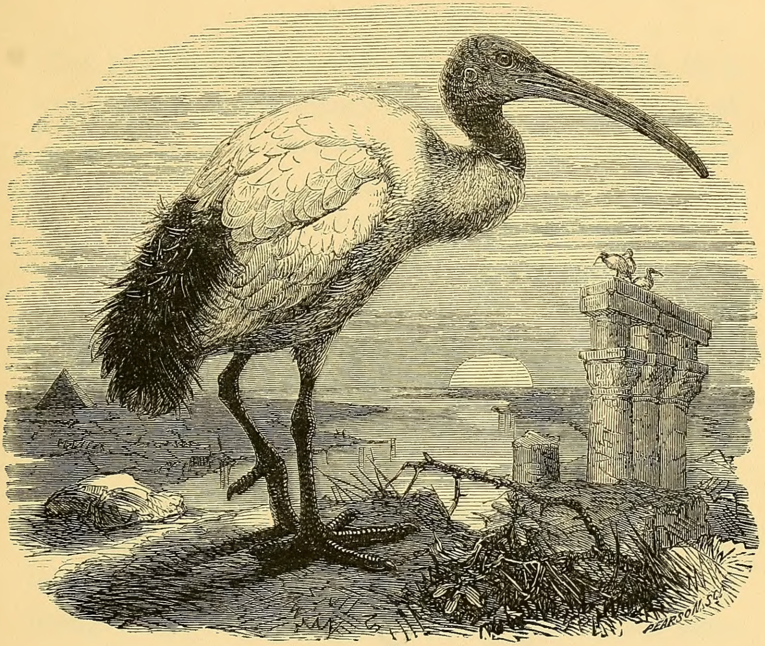
A

QUARTERLY JOURNAL OF ORNITHOLOGY.

EDITED BY

ALFRED NEWTON, M.A.,

LATE FELLOW OF MAGDALENE COLLEGE, CAMBRIDGE;
F.L.S., F.Z.S., ETC., ETC.



VOL. I. 1865.

NEW SERIES.

> Ibidis interea tu quoque nomen habe!
> —Ovid.

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PREFACE.

'THE IBIS' was established in the autumn of 1858, by a small Society of gentlemen interested in the progress of Ornithology, with the view of supplying a want then seriously felt in this country—a means of communication among the many Naturalists who chiefly confined their attention to this interesting study, and an organ whereby they might more readily bring before the public the results of their labours, discoveries, and observations in different parts of the world.

Under the able Editorship of Mr. P. L. SCLATER, Six annual Volumes, forming the First Series of 'THE IBIS,' have appeared. These, it may be said, without fear of contradiction, contain an amount of information on every branch of Ornithology such as has never before been brought together in one single work, while at the same time they form a very complete record of the advancement of the Science during the last six years.

Thanks to the activity of those who have kindly aided the present Editor, he trusts that the volume now completed—the First of the New Series—may be compared not disadvantageously with any of its predecessors. But in order that 'THE IBIS' should reach that point of usefulness which its promoters think it might attain, further efforts are required to increase its circulation. From the nature of the case, it cannot be expected to vie in this respect with periodicals of less limited scope; but it is believed that there are many persons, deeply interested in Ornithology, who would willingly support this Journal, were they but aware of the character of the papers it contains. For this reason the Editor hopes that all readers of 'The Ibis' will do their utmost to make its objects more fully known among such of their friends as are likely to contribute to its success, while, on his part, he promises not to relax his endeavours to maintain for the New the high repute which the First Series earned.

A. N.

Magdalene College, Cambridge.
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142,	9,	*for* Isle of Man *read* Isle of May.
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THE IBIS.

NEW SERIES.

No. I. JANUARY 1865.

I.—*On the Distribution of Birds in Great Britain during the Nesting-season.* By A. G. More, F.L.S.

[Part I. With a Map.—Plate I.]

All books on British ornithology give some indication, more or less exact, of the range or distribution of the several birds. Still I am not aware that any one in this country has yet made this branch of ornithology a special subject of study, interesting as it is in itself, and important in many scientific points of view.

Whether we wish to compare the respective range of the different branches of our Fauna and Flora, or to contrast their distribution in Great Britain with their range on the Continent, whether it is our object to estimate the effect of climate, prevailing winds, soil, geographical position, or the influence of man, all these most interesting questions can only be properly investigated when we have sufficiently exact data in each of the classes. Thus it is hoped that an attempt to illustrate the distribution of our birds on a regular and methodical plan will not be without its use.

Our census is necessarily limited to the nesting-season, that being the only time when the birds can be treated as stationary; and, for the sake of uniformity, we have adopted the districts already employed by Mr. H. C. Watson in his great work on the geographical distribution of British plants, the 'Cybele Britannica.'

The present outline is confessedly imperfect, not only from the insufficient number of observers, but because it has been thought better in many cases to withhold information of a doubtful character, rather than run the risk of mixing good with bad authority; and as no pains have been spared to investigate every disputed point, it is hoped that the results may be accepted as tolerably accurate so far as they go.

Had our scheme any claim to completeness, it might no doubt be considered partly as a record of the present and past distribution of several species now fast decreasing through the progress of cultivation and drainage, and, we regret to add, the persecution of game-preservers and collectors. It might also become a measure of the future increase of other birds which seem to flourish under the protecting hand of man.

The present results might also be used as a means of ascertaining some particulars of the movements of birds which remain in Britain all the year, and yet are partially migratory. This might be accomplished by noting the districts which a bird frequents during summer or winter only, or in which any species is more numerous at one season than another.

It is hoped that all who may feel interested in the subject of this paper will not fail to point out any inaccuracy which they may observe, and that they will also endeavour to supply the omissions unavoidable in a first attempt. It is suggested that such additions might form an interesting subject for communication to the 'Ibis,' even if only one additional district can be filled up on good authority. Full lists of the nesting-birds of South and North Wales, of the North-west of England, and of almost any part of Scotland are especially desired.

In acknowledging how much is due to the kind cooperation of the many friends and correspondents who have assisted in this undertaking, I have especially to thank Dr. J. A. Smith of Edinburgh, the Rev. George Gordon of Birnie, and Mr. Robert Gray, Secretary to the Natural History Society of Glasgow, who have not only furnished me with information themselves, but have taken great pains in collecting lists from various parts of Scotland.

My friend Mr. Alfred Newton has constantly assisted me with his advice and criticism, and I have also to return my warmest thanks to Mr. H. C. Watson, who has been repeatedly consulted in the preparation of this paper, and who has kindly allowed the accompanying map to be borrowed from the 'Cybele Britannica.'

The Latin names here used are taken from Mr. G. R. Gray's 'British Museum Catalogue of the Eggs of British Birds' (1852); the order followed is that of Yarrell. Roman numerals represent the larger eighteen districts or "Provinces," and Arabic figures the thirty-eight smaller "Subprovinces," as laid down on the map. When a figure is enclosed in brackets, it is intended to show that the bird has been known to nest in the district, but has not done so of late years. The smaller Arabic figures indicate a greater degree of rarity, or that the bird has been ascertained to breed in the district only occasionally.

The "Types of Distribution" afford a convenient formula for grouping the different species, according as they appear to prevail in the South, North, South-east, or South-west of Great Britain. Thus,

"*British type*" includes birds which are tolerably general throughout Great Britain, though some of them become scarce or wanting in the north of Scotland.

"*English type*" comprises birds more abundant in the south, and which do not reach far north in Scotland.

"*Germanic type*," birds which have their head-quarters in the south-east of England, and become scarce as we advance to the north and west; for example, the Nightingale.

"*Atlantic type*," birds which are more abundant on the western side of Great Britain, or which have their head-quarters in the south-west of England.

"*Scottish type*," birds more abundant in Scotland than in England, and which become less numerous as we advance south.

"*Highland type*," mountain species, *e. g.* Snow Bunting, Golden Eagle, and Dotterel.

The following are the particulars of Mr. Watson's "Provinces" and "Subprovinces," together with the names of the friends and correspondents who have furnished me with lists from each of the districts :—

PROVINCE I. "Peninsula."

1. *Cornwall,* Mr. E. H. Rodd.
2. *Devon,* Mr. J. Gatcombe, Mr. W. Ford, Rev. M. A. Mathews.
3. *Somerset,* Mr. W. D. Crotch, Mr. W. M. Richards.

PROVINCE II. "Channel."

4. *Wilts,* Rev. A. C. Smith. *Dorset,* Rev. O. Pickard-Cambridge, Rev. J. H. Austen, Mr. H. Groves.
5. *Hampshire,* Professor Bell, Mr. R. Tindall, Mr. H. Rogers. *Isle of Wight,* Rev. C. A. Bury, Mr. H. Rogers.
6. *Sussex,* Mr. Knox, Mr. Borrer.

PROVINCE III. "Thames."

7. *Kent,* Rev. H. Roundell, Mr. C. Gordon, Mr. G. Jell. *Surrey,* Mr. F. Godman.
8. *Essex,* Mr. H. Doubleday, Dr. C. R. Bree, Rev. J. C. Atkinson. *Herts,* Mr. F. Bond. *Middlesex,* Mr. F. Bond.
9. *Berks* (no list). *Oxford,* Rev. A. Matthews. *Bucks,* Rev. H. Roundell, Rev. B. Burgess, Rev. C. Lowndes.

PROVINCE IV. "Ouse."

10. *Suffolk,* Mr. A. Newton, Rev. J. Farr.
11. *Norfolk,* Mr. A. Newton, Mr. T. Southwell, Mr. H. Stevenson, and Messrs. Gurney and Fisher's List, published in the 'Zoologist' for 1846.
12. *Cambridge,* Mr. F. Bond. *Bedford* (no list). *Huntingdon,* Mr. F. Bond. *Northampton,* Lord Lilford.

PROVINCE V. "Severn."

13. *Gloucester,* Rev. F. J. Scott. *Monmouth* (no list).
14. *Hereford,* Mr. R. M. Lingwood, Mr. W. H. Powell, Mr. A. Hepburn. *Worcester,* Mr. G. A. Sheppard, Mr. J. Walcot. *Warwick,* Mr. R. F. Tomes.
15. *Stafford,* Sir J. H. Crewe, Mr. R. Garner's 'Natural History

of Stafford.' *Shropshire,* Mr. W. H. Slaney, Mr. H. Shaw.

PROVINCE VI. "South Wales."

16. *Glamorgan* (no list). *Brecon* (no list). *Radnor* (no list).
17. *Carmarthen* (no list). *Pembroke,* Mr. J. Tracy. *Cardigan* (no list).

PROVINCE VII. "North Wales."

18. *Montgomery* (no list). *Merioneth* (no list). *Denbigh* (no list). *Flint* (no list). *Carnarvon* (no list). *Anglesea* (no list). The only authority for this district is Mr. T. C. Eyton's "Attempt to ascertain the Fauna of Shropshire and North Wales," published in the 'Annals of Natural History,' vols. i. and ii.

PROVINCE VIII. "Trent."

19. *Lincoln,* Rev. R. P. Alington, Mr. G. Adrian.
20. *Leicester,* Rev. A. Matthews and Mr. J. Harley's "Catalogue of the Land-birds of Leicestershire" in Macgillivray's 'British Birds,' vol. iii. p. 646. *Rutland,* Mr. W. Bell. *Nottingham,* Mr. H. Milner, Rev. R. Sutton. *Derby,* Sir John H. Crewe, Mr. O. Salvin, Rev. H. H. Crewe, Mr. J. J. Briggs.

PROVINCE IX. "Mersey."

21. *Cheshire,* Mr. J. F. Brockholes, Mr. C. S. Gregson. *Lancashire* (South), Mr. J. F. Brockholes, Mr. C. S. Gregson.

PROVINCE X. "Humber."

22. *East Yorkshire,* Rev. J. C. Atkinson, Mr. A. S. Bell.
23. *West Yorkshire,* Mr. Waterton, Mr. H. Smurthwaite, Mr. H. Reid.

PROVINCE XI. "Tyne."

24. *Durham,* Rev. H. B. Tristram, Mr. J. Hancock. *Northumberland,* Mr. Selby, Mr. J. Hancock, Rev. H. B. Tristram.

PROVINCE XII. "Lake-lands."

25. *North Lancashire* (no list). *Westmoreland,* Mr. T. Gough. *Cumberland,* Mr. C. S. Gregson, Mr. T. Hope, Dr. Heysham in Hutchinson's 'History of Cumberland.' *Isle of Man,* Mr. J. F. Crellin.

PROVINCE XIII. "West Lowlands."

26. *Dumfries,* Sir W. Jardine. *Kirkcudbright* (no list). *Wigton,* Rev. T. B. Bell.
27. *Ayr,* Mr. R. Gray. *Renfrew,* Mr. M. Young. *Lanark,* Mr. D. Stewart.

PROVINCE XIV. "East Lowlands."

28. *Peebles* (no list). *Selkirk,* Mr. J. F. Whitecross. *Roxburgh,* Dr. J. A. Smith, Mr. J. F. Whitecross. *Berwick,* Rev. J. Duns, Mr. R. Gray. *Haddington,* Mr. A. Hepburn, Mr. R. Gray, Mr. J. R. Pencaitland. *Edinburgh,* Dr. J. A. Smith. *Linlithgow,* Mr. T. D. Weir, Rev. J. Duns.

PROVINCE XV. "East Highlands."

29. *Fife* (no list). *Kinross* (no list). *Clackmannan,* Dr. P. Brotherson. *Stirling,* Dr. D. Dewar, Mr. J. Murray. *Perthshire,* Col. Drummond-Hay, Mr. A. Pullar, Mr. J. Lamb.
30. *Forfar* (no list). *Kincardine* (no list). *Aberdeen,* Mr. T. Edward, and the list given in Macgillivray's 'Natural History of Dee-side.'
31. *Banff,* Mr. T. Edward. *Elgin,* Rev. G. Gordon. *Nairn,* Mr. W. A. Stables. *Inverness* (east of Loch Erricht), Mr. W. M. Snowie, Mr. W. Dunbar.

PROVINCE XVI. "West Highlands."

32. *Inverness* (west of Loch Erricht), (no list). *Argyle,* Captain J. W. P. Orde, Dr. D. Dewar. *Dumbarton,* Mr. R. Gray.
33. *Islay, Jura, Colonsa,* &c. (no list). *Mull* and *Iona,* &c., Mr. H. D. Graham. *Skye,* &c. (no list).

PROVINCE XVII. "North Highlands."

34. *Ross-shire,* Mr. W. Dunbar, Mr. Danford. *Cromarty* (no list).

35. *Sutherland,* Mr. W. Dunbar, and the writings of the late Mr. St. John, MS. of the late Mr. J. Wolley. *Caithness,* Mr. R. J. Shearer, Mr. H. Osborne, Mr. W. Dunbar, MS. of the late Mr. J. Wolley.

PROVINCE XVIII. "North Isles."

36. *Outer Hebrides* (*S. & N. Uist, Harris,* and *Lewis*), Captain J. W. P. Orde, Dr. D. Dewar, Sir W. Milner's List, published in the 'Zoologist,' p. 2054, Mr. J. Macgillivray's "Zoology of Outer Hebrides," 'Annals & Mag. Nat. Hist.' vol. viii. p. 7, 1842.
37. *Orkney,* Low's 'Fauna Orcadensis,' Drs. Baikie and Heddle's 'Nat. Hist. of Orkney,' list from Mr. J. H. Dunn.
38. *Shetland,* Dr. H. L. Saxby and Mr. J. H. Dunn.

Though no list has been obtained from South-east Wales, it has been thought best to assume the Subprovince 16 as filled in, whenever a bird has been found to nest in the surrounding districts.

AQUILA CHRYSAETOS (*Pall.*). Golden Eagle.

Provinces [VII.] [VIII.] [XI.] [XII.] XIII. XV.–XVIII.
Subprovinces (18), (20), (24 ?), (25 ?), 26, (27), 29, 30, 31, 32, (33), 34, 35, 36, (37).
Lat. 55°–59°. "Highland" or Mountain type.

In the time of Willughby, the Golden Eagle was reported to breed annually upon the high rocks of Snowdon; the same writer records a nest found in Derbyshire in 1668. Bewick quotes from Wallis the remark that the Golden Eagle formerly had its eyrie on the highest part of Cheviot. Sir W. Jardine, in his 'British Birds,' speaks of the precipices of Westmoreland and Cumberland as having once boasted of eyries.

In the south and east of Scotland the Golden Eagle appears to be nearly extinct, having ceased to nest in the counties of Dumfries, Ayr, Forfar, Banff, and Elgin, but still breeds in Kirkcudbright (*Rev. T. B. Bell*) and Stirling (*Mr. R. Gray*), regularly in Perthshire (*Col. Drummond-Hay*), Aberdeen (*Mr. A. Newton*), and the western and northern parts of Scotland and in the Hebrides.

Dr. Moore, writing on the birds of Devonshire (Charlesworth's Mag. of Nat. Hist. vol. i. p. 114), mentions that a nest was formerly known on the Dewerstone Rock, close under Dartmoor. This locality is at least ten or twelve miles from the sea; but the nest is as likely to have belonged to the next species as to the Golden Eagle.

HALIAETUS ALBICILLA (*Leach*). White-tailed or Sea Eagle.

Provinces [I.] [II.] [XII.] [XIII.] [XIV.] XV.–XVIII.
Subprovinces (2), (5), (25), (26), (27), (28), 29, (30), 31, 32, (33), 34, 35, 36, 37, 38.
Lat. 56°–61°. "Scottish" or Northern type.

The Rev. M. A. Mathews informs me that the Sea Eagle formerly nested in Lundy Island.

In a 'History of the Isle of Wight,' by the Rev. R. Warner, it is stated that an Eagle has been known to incubate among the crags of the Culver Cliff: the last known to build came there in 1780, when a young bird was taken from the nest. Willughby mentions an eyrie in Whinfield Park, Westmoreland; and in 1692, Mr. Aubrey was told that "Eagles do breed in the parish of Bampton," in the same county ('Corresp. of John Ray,' p. 257), which Eagles must have been either this or the preceding species. Dr. Heysham also tells us that in his day this Eagle bred almost every year near Keswick and Ullswater. The late Mr. W. Thompson observed a pair of Eagles in the English Lake-district, in July 1835 (Charlesworth's Mag. Nat. Hist. i. p. 164); and Mr. C. S. Gregson informs me that there is a crag near Grasmere still known as "Eagles' Cliff." Mr. J. F. Crellin has ascertained that a pair of Eagles used to build in the high cliffs at the south end of the Isle of Man: none have bred since this pair was destroyed in a snow-storm, about fifty years ago.

In the south of Scotland, the Sea Eagle used to breed in Dumfries (Charlesworth's Mag. Nat. Hist. i. pp. 119 and 444), in Kirkcudbright (*Rev. T. B. Bell*), on Ailsa (*Mr. R. Gray*), on the Bass (*J. Wolley*, in 'Ooth. Woll.' p. 49), and seems to be nearly or quite extinct in the south of Scotland, but is still to be found nesting in various localities in the Highlands and Scottish isles.

PANDION HALIAETUS (*Cuv.*). Osprey.

Provinces [I.?] [XIII.] XV. XVI. XVII.
Subprovinces (3?), (27), (29), 31, 32, 34, 35.
Lat. 56°–59°. "Scottish" type. Not in Ireland.

Mr. W. D. Crotch informs me that a nest was built, eighteen years ago, at Monksilver in Somersetshire: "the keeper shot the birds when making their nest."

Mr. R. Gray tells me that the nest has been found on Loch Doon, in Ayrshire. Other localities might be cited in Stirling, Perth, Elgin, Inverness, Argyle, Dumbarton, Ross, and Sutherland; but the bird and its eggs are so much sought after by collectors that very few pairs continue to nest in any part of Scotland*.

FALCO PEREGRINUS (*Gmel.*). Peregrine Falcon.

Provinces I.–III. [IV.] V.–VII. X.–XVIII.
Subprovinces 1–7, (11), (14), 15, 17, 18, 22, 23, 24–38.
Lat. 50°–61°. "British" type, or general.

Thinly scattered from the south to the north of Great Britain. More frequent on the rocky headlands of the north and west coasts, and not found in some of the level districts of the middle and south-east of England.

HYPOTRIORCHIS SUBBUTEO (*Boie*). Hobby.

Provinces I. II. III. IV. V. VIII. X.
Subprovinces 3, 4, 5–12, 14, 15, 19, 20, 22, 23.
Lat. 50°–54°. "Germanic" or South-eastern type. Not in Ireland.

A scarce bird in all the districts where it breeds. Though noticed by Dr. Moore as breeding in Warleigh Woods, the Hobby is not included in any of the recent lists which I have received from Devonshire, nor have I any record of its nesting in Wales. It seems to be more frequent in the south-eastern and midland counties of England, its distribution thus resembling that of the Nightingale.

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* We doubt if the Osprey has bred in Scotland for more than ten years.—ED.

HYPOTRIORCHIS ÆSALON (*Boie*). Merlin.

Provinces II. III. V.–VIII. X.–XVIII.
Subprovinces 5, 8, 14, 15, 17, 18, 20, 22–38.
Lat. 50°–61°. "Scottish" or Northern type.

The Rev. M. A. Mathews informs me that the Merlin has been seen on Exmoor in June.

In the 'Zoologist' for 1862 (p. 8159), Mr. W. Farren gives an account of his finding the nest of the Merlin in low trees in the New Forest; and Mr. H. Rogers has obtained birds and eggs from the same locality.

From Essex Dr. C. R. Bree writes that the Merlin breeds in the marshes of the Rochford hundred. Mr. Laver, his informant, has brought up the young birds from the nest.

Breeds occasionally in Hereford (*Mr. R. M. Lingwood*), on the Longmynd Hills in Shropshire (*Mr. Shaw*), occasionally in Pembrokeshire (*Mr. Tracy*), regularly in Derbyshire (*Mr. O. Salvin*), in North Wales (*Eyton*), and from Yorkshire northwards is marked as nesting regularly in every county.

TINNUNCULUS ALAUDARIUS (*G. R. Gray*). Kestrel.

Provinces I.–XVIII.
Subprovinces 1–38.
Lat. 50°–61°. "British" type, or general.

The commonest and best known of all our birds of prey. Breeds throughout Great Britain, and is marked as nesting regularly in every county. Doubtless breeds in South-east Wales (subprovince 16), the only district from which I have no return.

ASTUR PALUMBARIUS (*Bechst.*). Gos-Hawk.

Provinces XIV.? [XV.]
Subprovinces 28 ?, (30 ?), (31).
Lat. 55° or 57°–58°. "Scottish" type. Not in Ireland.

Mr. Tottenham Lee, writing in Dr. Morris's 'Naturalist' for 1853 (vol. iii. p. 45), states that a pair once took possession of a Raven's nest in Roxburghshire, and that he had heard of another nest in the same county. Mr. Robert Gray, of Glasgow, who knew Mr. Lee, tells me that he was perfectly familiar with birds of prey, and was not likely to make a mistake as to the species.

Macgillivray appears to have met with the Gos-Hawk occasionally among the Grampians; and Montagu quotes Colonel Thornton as having obtained a young Gos-Hawk from near the Spey, and as having seen some eyries in the Forest of Glenmoor and Rothiemurcus. Mr. W. Dunbar also writes that when he was a boy it "used to breed regularly in the woods of Castle Grant, and in Abernethy and Dulnane forests."

In the 'Zoologist' for 1863 (p. 8678) mention is made of a nest found in Yorkshire, supposed to have been that of a Gos-Hawk*.

ACCIPITER NISUS (*Pall.*). Sparrow-Hawk.
Provinces I.–XVIII.
Subprovinces 1–37, 38.
Lat. 50°–61°. "British" type, or general.

Throughout Great Britain, extending to the Outer Hebrides and North Scottish isles.

MILVUS REGALIS (*Briss.*). Kite.
Provinces I.–VIII. X. XI. XIII. XV.–XVII.
Subprovinces 1–9, 11, 12, 14, 15, 17–20, 22–26, 29–32, 34, 35.
Lat. 50°–59°. "British" type, or general. Not now in Ireland.

The Kite has become so scarce, that it is impossible to distinguish between the districts where it is quite extinct, and those where a few pairs may still continue to breed. "In Perthshire the Kite is not only destroyed for the sake of the game, but for its feathers, which are used in making salmon-flies; so that, from being, within my recollection, quite a common bird, it is now nearly extinct." (*Colonel Drummond-Hay.*)

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* It seems reasonable to suppose that, in the days when forests of *Pinus sylvestris* flourished naturally in Scotland, the Gos-Hawk inhabited the districts so occupied; and Colonel Thornton's evidence as to the fact of its breeding there must be considered satisfactory. It is well known among ornithologists that in some places this bird has bequeathed its common name to *Falco peregrinus*, and hence much confusion has arisen.—ED.

Buteo vulgaris (*Bechst.*). Common Buzzard.

Provinces I.–VIII. X.–XVII.
Subprovinces 2–8, 11, 12, 14, 15, 17–20, 22–25, 26–35.
Lat. 50°–59°. "British" type, or general.

By no means common, and nearly exterminated in the eastern and midland counties of England. Still breeds regularly in several parts of the west and north of England and in Scotland, where it has a better chance of escaping the vigilance of the gamekeeper.

Archibuteo lagopus (*G. R. Gray*). Rough-legged Buzzard.

Provinces [X.] XV.
Subprovinces (22), 31.
Lat. 54°–58°. "Scottish" type. Not in Ireland.

A single pair bred for several years in succession at Hackness, where they appeared as summer visitors.

Mr. Alwin S. Bell, of Scarborough, has kindly furnished the following particulars:—"Mr. John Smith, who was gamekeeper for twenty years on the estate of Sir J. V. B. Johnstone, remembers the Rough-legged Buzzards perfectly well: there was no mistake as to the species, as they were feathered right down to the toe-ends. They used to breed, year after year, on the ground, amongst the heather, in the moor-dells near Ash Hay Gill, Whisperdale, about three miles from Hackness. One pair only bred every year during most of the time that Mr. Smith was keeper (twenty-four years ago). They were not seen except in the breeding-season. Mr. Smith has himself shot them from the nest, and remembers that they sometimes had young."

Mr. Williamson, the Curator of the Museum at Scarborough, confirms this statement, and remembers a male Rough-legged Buzzard being trapped by the keeper and brought alive to Scarborough. This bird escaped; but soon afterwards its mate was shot; and in the following spring the same male returned, with another partner, when both were taken, and on the male was found distinctly the mark inflicted by the trap.

Mr. Thomas Edward, in his account of the Birds of Banffshire (Zoologist, 1856, p. 5201), writes that the nest has been rarely found in Banffshire; and in confirmation of this statement it may be added that Mr. Edward has this season (1864) seen three young, which were taken by a boy from a nest in a wood about six miles from Banff.

PERNIS APIVORUS (*Cuv.*). Honey Buzzard.

Provinces II. III. IV. V. XI. XII.? XV.?
Subprovinces 5, 9, 12, 14, 15, 24, 25 ?, 30 ?
Lat. 50°–56° or 58°. "English" type. Not in Ireland.

This bird is well known to build occasionally in the New Forest, Hampshire. A nest, found at Selborne in 1780, is recorded by White.

The nest has also been taken in Oxfordshire (*Rev. A. Matthews*). At Burnham Beeches, Berks (*Mr. Blyth,* in Charlesworth's Mag. of Nat. Hist. i. p. 539). In Northamptonshire, twice within the last ten years (*Lord Lilford*). Formerly in Warwickshire (*Mr. R. F. Tomes*). Stafford (Zoologist, p. 5097). Shropshire (*Mr. H. Shaw*). Northumberland (*Mr. J. Hancock*). In Cumberland, Mr. Heysham was informed that it bred in the woods at Lowther; and in Macgillivray's 'British Birds' (iii. p. 261) mention is made of a nest taken by Mr. J. M. Brown in the woods of Abergeldie, in Aberdeenshire.

CIRCUS ÆRUGINOSUS (*Sav.*). Marsh Harrier.

Provinces I. II. [III.] IV. V. [VI.] VII. [VIII.] [X.] XI. [XII.] [XIV.] XV. XVIII. ?
Subprovinces 1–5, (7), (10), 11, (12), 15, (17), 18, (19), (23), 24, (25), (28), 30, 31, 37 ?
Lat. 50°–58° or 60°. "British" type, or general.

Once frequent, now nearly exterminated; but still breeds occasionally in a few English counties. Much rarer in Scotland, where the nest has been found only in Haddington (*Mr. A. Hepburn*), in Perthshire (*Mr. A. Pullar* and *Mr. J. Lamb*), in Aberdeen and Banff (*Mr. T. Edward*), and in Orkney (*Mr. J. Dunn*). From its scarcity in Scotland, the distribution of this species approaches to the English or southern type.

Circus cyaneus (*Boie*). Hen Harrier.

Provinces I.–VIII. X.–XVIII.
Subprovinces 2, 3, 4, 5, 6, 7, (10), 11, (12), 15, 17, 18, 19, 20, 22, 23–32, 34–37, 38.
Lat. 50°–61°. "British" type, or general.

Scarce in the south-eastern and midland counties, and already extirpated in many of them; frequent in the north and some parts of the west of England, and still more common in Scotland.

Circus cineraceus (*Naum.*). Montagu's Harrier.

Provinces I.–IV. V.? VIII. X. XVII.?
Subprovinces (2), 3, 4, 7, (10), 11, (12), 15?, (19), 22, 25, 35?
Lat. 50°–55° or 58°. "English" type. Not in Ireland.

A scarce species. Until recently, appears to have been a regular summer visitant to some of the southern and eastern counties.

Formerly found nesting in Devonshire by Montagu, and still breeds occasionally in Somerset, Dorset, Kent, and Norfolk. Extinct in Devon, Suffolk, Cambridge, Huntingdon, and Lincoln. In Shropshire Mr. Shaw once obtained a female that had been recently sitting; and a nest, found on the Whitby Moors, near Scarborough, is recorded in Dr. Morris's 'Naturalist' for 1855. Mr. Hancock writes that he has two young birds which were bred in Cumberland. There appears to be some doubt whether the species has been properly identified in Scotland, though Mr. Dunbar tells me that he has "eggs and birds from Sutherland." Sir W. Milner also includes it in his list of birds found in that county (Zoologist, p. 2014). This species is believed to have occurred once in Ayrshire, according to Thompson's 'Birds of Ireland' (vol. i. p. 83).

Otus vulgaris (*Flem.*). Long-eared Owl.

Provinces I.–XVII.
Subprovinces 2, 3, 4, 6, (8), 10, 11, 12, 14, 15, 17, 19, 20, 21–32, 34, 35.
Lat. 50°–59°. "British" type, or general.

Apparently more frequent in the north of England and in

Scotland, perhaps owing to the greater prevalence of fir and pine woods, which are its favourite resort. Scarce during the breeding-season in the southern and midland counties, where it is better known as a winter visitor. Mr. A. Newton considers it the commonest Owl in the eastern counties.

OTUS BRACHYOTUS (*Boie*). Short-eared Owl.

Provinces IV. X. XI. XII.? XIII.–XVIII.
Subprovinces 10, 11, 12, 22, 24, 25?, 26–29, 34–37.
Lat. 52°–60°. "Scottish" or Northern type. Not in Ireland.

Breeds in Suffolk, Norfolk, and Cambridge; formerly also in Huntingdon (*Mr. F. Bond*). The nest has been once or twice taken near Scarborough (*Mr. A. S. Bell*). In Durham and Northumberland (*Mr. Hancock* and *Rev. H. B. Tristram*). Sir W. Jardine also mentions the moorland ranges of Westmoreland and Cumberland as probable breeding-places.

In Scotland, the Short-eared Owl nests regularly in Dumfries (*Sir W. Jardine*), on Ailsa (*Mr. R. Gray*); in the counties of Selkirk and Roxburgh occasionally (*Mr. J. F. Whitecross*); in Stirling (*Mr. J. Murray*), Clackmannan (*Dr. P. Brotherson*); in Perth (*Mr. A. Pullar*); in Ross, Sutherland, Caithness, Hebrides, and Orkney.

STRIX FLAMMEA (*L.*). Barn- or White Owl.

Provinces I.–XVII.
Subprovinces 1–29, 30, 31, 32, 33–35.
Lat. 50°–59°. "British" type, or general.

Very rare in the north of Scotland, and nests only occasionally in Ross and Caithness.

Low states that it used to breed in Hoy; but the bird has not been recently seen in the Orkneys.

SYRNIUM ALUCO (*Cuv.*). Tawny Owl.

Provinces I.–XVII.
Subprovinces 1–32, 34, 35, 37?
Lat. 50°–59°. "British" type, or general. Not in Ireland.

Scarce in the north of Scotland, according to Macgillivray;

but is reported by various correspondents as nesting regularly in the counties of Aberdeen, Banff, Elgin, Nairn, Inverness, Ross, Sutherland, and even in Caithness; Low describes it as found in the more hilly part of Orkney in summer. It is singular that this Owl should be so scarce in Ireland, Thompson giving only a single instance of its occurrence.

Obs.—Several supposed instances of the Snowy Owl (*Nyctea nivea*, Bonap.) breeding in the British Islands are on record. In the 'Zoologist' for 1856 (p. 5201), Mr. T. Edward gives an account of a nest, containing two young birds, which was found in 1845 in a narrow chasm on the promontory of Loggie Head, Banffshire; but in a letter which I have lately received from Mr. Edward, he tells me that he did not see the birds himself.

Mr. J. H. Dunn tells me that the Snowy Owl bred on the hills of Orphir, near Stromness, about thirty-five years ago. He knows the person well who took different nests.

Dr. Saxby writes that the Snowy Owl was first obtained in Shetland in 1808 by Dr. Edmonston, "who neither had nor has any doubt that the bird bred at that time. The spot where the nest used to be found is still pointed out." In Macgillivray's 'British Birds' (vol. iii. p. 412) mention is made of a nest and three young birds found in Shetland, and reported to Dr. Edmonston, who, however, is there quoted as saying, "I have always doubted whether it bred here."

Mr. Robert Gray thinks that the Snowy Owl may breed in the Hebrides, where it is by no means rare. It has been repeatedly seen at Benbecula; and specimens have been recently obtained in Skye, Harris, and Benbecula.

On the Continent the Snowy Owl is strictly an Arctic species, breeding only at Alpine elevations, and these north of latitude 60°, hence its nesting in any part of the British Isles appears highly improbable.

The Scops Eared Owl (*Ephialtes scops*, Keys. et Blas.) is recorded by Mr. Hogg (Brewster's 'History of Stockton-on-Tees,' App. p. 14), on the information of Mr. Winch, as having been known to breed once, forty years ago, in Castle-Eden Dene, Durham.

Enneoctonus collurio (*Boie*). Red-backed Shrike.

Provinces I.–XII. XIV.
Subprovinces 1, 2–15, 17, 18, 20, 21–25, 28.
Lat. 50°–55° or 56°. "English" type. Not in Ireland.

Breeds only occasionally in Cornwall, and is apparently not found in Lincolnshire. Mr. Eyton describes the Red-backed Shrike as very common in Wales. Thence northwards it becomes rare, nesting only occasionally in Westmoreland, Cumberland, and Durham, and is not included in the Northumberland list.

A very few instances are known of it breeding in Scotland. The Rev. J. Duns has once seen a pair during the summer in Berwickshire. Mr. Robert Gray tells me that a pair frequented a hedge-row near Dunbar during the breeding-season of 1852; and Mr. J. R. Pencaitland has ascertained that the nest has been once found in Haddingtonshire.

Obs.—The Woodchat (*E. rufus*) is thought to have once or twice nested at Freshwater, in the Isle of Wight, where Mr. H. Rogers has twice taken a nest which Mr. F. Bond refers to this species; and Mr. Rogers believes that he saw the parent bird about the same locality. A young bird of the year was shot, in 1856, in the vicinity of the spot where the nest had been taken.

The Ash-coloured Shrike (*Lanius excubitor*) is also supposed to have bred in this country, from the circumstance of old birds having been noticed during the summer months. In his 'British Birds,' Lewin writes, "I have seen it in Wiltshire, and have no doubt of its breeding there." Yarrell mentions its occurrence during summer in Essex and Northumberland. The Rev. J. Duns has seen the bird in summer, in Linlithgow; and the Rev. T. M. Richards informs me that he once found the nest and young of the larger Butcher-bird in Somerset, and killed the old birds before he was aware of their rarity. I learn from my friend, the Rev. W. H. Hawker, that the nest recorded by him in the 'Ibis' for 1859 (p. 330) has proved to be that of the Red-backed, not the Ash-coloured, Shrike.

Muscicapa grisola (*L.*). Spotted Flycatcher.

Provinces I.–XVII.

Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

Less frequent in Scotland; but Mr. Dunbar finds it breeding as far north as Sutherland and Caithness.

MUSCICAPA ATRICAPILLA (*L.*). Pied Flycatcher.

Provinces I.–V. VII. VIII. X.–XII. XIV.? XV.?
Subprovinces 2–5, 7, 9, 11, 13, 14, 15, 18, 20, 22, 23, 24, 25, 28?, 30?
Lat. 50°–55° or 58°. Type uncertain. Not in Ireland.

A very local species. The nest has been occasionally found in North Devon, Somerset, Dorset, Isle of Wight, Surrey, Oxford, Norfolk, Gloucester, Shropshire, Leicester, and Derby. The bird breeds regularly in a few counties of the north and west of England.

In Scotland, the Rev. J. Duns is assured by a friend, upon whom he can rely, that the Pied Flycatcher has occasionally bred in the neighbourhood of Torphichen.

Mr. T. Edward has seen the young which were taken near Aberdeen, where the bird is said to breed occasionally; and the species has several times come under his notice in the counties of Banff and Aberdeen.

HYDROBATA CINCLUS (*G. R. Gray*). Dipper.

Provinces I. II. V.–XVIII.
Subprovinces 1, 2, 3, 4, 13–15, 17, 18, 20–36.
Lat. 50°–59°. "Scottish" or Northern type.

In all the hilly districts of the west and north of England, and throughout Scotland, reaching also to the Hebrides.

Breeds on one river in Dorsetshire, as I am informed by Mr. H. Groves, who has eggs from this locality.

TURDUS VISCIVORUS (*L.*). Mistletoe-Thrush.

Provinces I.–XVII.
Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

Apparently still increasing in Scotland, as it is now recorded as breeding regularly even in the most northern counties.

TURDUS MUSICUS (*L.*). Song-Thrush.

Provinces I.–XVIII.
Subprovinces 1–37.
Lat. 50°–60°. "British" type, or general.

Extends to the Outer Hebrides and Orkney, but does not breed in Shetland.

TURDUS MERULA (*L.*). Blackbird.

Provinces I.–XVIII.
Subprovinces 1–35, 37.
Lat. 50°–60°. "British" type, or general.

Nests regularly even in the most northern parts of Scotland and in Orkney; but apparently does not extend to Shetland, nor to "the northern and more remote Hebrides" (*Macgillivray*).

Obs.—It has been thought that a few pairs of the Redwing (*Turdus iliacus*) occasionally remain during summer and nest in this country. Mr. Blyth, in Charlesworth's 'Mag. of Nat. Hist.,' states that he had known several such instances in Surrey: he also quotes (vol. i. p. 440) the statement of a dealer, that a nest was taken at Barnet. Yarrell mentions a nest found at Godalming; and one taken in Leicestershire is recorded in the 'Zoologist' for 1864, p. 9248.

In Shropshire, Mr. Eyton has noticed that some remain all the summer near Eyton.

In the summer of 1855, Dr. Saxby found a nest in North Wales. It was placed in a tall Portugal laurel; and he repeatedly observed the bird sitting on her eggs, which he afterwards took (see Zoologist, 1861, p. 7427).

In the Outer Hebrides, Mr. Bullock stated that he had found a nest in Harris; and in Orkney, Mr. Low observed a pair "in Hoy through the greatest part of summer" (Faun. Orc. p. 58).

The Fieldfare (*Turdus pilaris*) also is recorded by Mr. Blyth to have bred at Merton in Surrey (Charlesworth's Mag. Nat.

Hist. iii. p. 467), but unfortunately that gentleman did not see the birds himself. In his 'Tour in Sutherland' (i. p. 206) Mr. St. John says, "I was shown a nest and eggs from near the Spey." Other instances of supposed nests or of the bird having been observed in summer may be found in the 'Zoologist,' the 'Field,' and other periodicals, but there is little doubt that in nearly all cases the Mistletoe-Thrush has been mistaken for the Fieldfare.

TURDUS TORQUATUS (*L.*). Ring-Ouzel.

Provinces I.–XVIII.
Subprovinces 1, 2, 3, 5, 7, 10, 11, 14, 15, 17, 18, 20–35, 36 ?, 37.
Lat. 50°–59°. "Scottish" or Northern type.

Nests regularly in the hilly parts of the west and north of England, and throughout Scotland. The nest has also been found occasionally in the Isle of Wight, Kent, Suffolk, Norfolk, Warwick, and Leicester. Mr. Dunn tells me that the Ring-Ouzel breeds occasionally in Hoy; and Yarrell mentions that Mr. Bullock found the nest in the Hebrides.

ORIOLUS GALBULA (*L.*). Golden Oriole.

Provinces I. II. ? III. IV.
Subprovinces 2, 4 ?, 7, 10, 11.
Lat. 50°–53°. "English" or Southern type. Not in Ireland.

The Rev. M. A. Mathews writes that the Golden Oriole has been known to breed in some pleasure-grounds near Barnstaple.

In Dorsetshire a male Golden Oriole was seen frequenting a garden near Blandford for more than a week, and was supposed to have a nest (*Rev. O. Pickard-Cambridge*, in 'Zoologist,' 1854, p. 4366).

In Kent the nest has several times been found: in a plantation near Ord, in 1836 (Zoologist, p. 834); near Elmstone, in 1849 (Zoologist, p. 2496); near Sandwich (Zoologist, p. 3034). Mr. Charles Gordon, of the Museum, Dover, mentions a nest taken near Elmstead; and adds that the bird appeared again in the same locality in 1861.

Meyer, in his 'Illustrations of British Birds,' figures a nest taken in Suffolk; and Messrs. Sheppard and Whitear speak of a nest found in a garden at Ormsby, in Norfolk. Mr. Alfred Newton tells me that the eggs in Mr. Scales's collection, which were thought to have been taken in Norfolk, were really procured from Holland.

ACCENTOR MODULARIS (*Bechst.*). Hedge Sparrow.

Provinces I.–XVII.
Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

Breeds as far north as Sutherland and Caithness. Is also found in the western isles of Scotland (*Yarrell*), and "builds in the bare islands of the north of Scotland" (*Macgillivray*).

ERYTHACUS RUBECULA (*Macgill.*). Redbreast.

Provinces I.–XVIII.
Subprovinces 1–35, 37.
Lat. 50°–60°. "British" type, or general.

Throughout England and Scotland. Nests and remains the whole winter in Orkney; but does not breed in Shetland, and only occasionally visits the Outer Hebrides.

RUTICILLA PHŒNICURA (*Bonap.*). Redstart.

Provinces I.–XVII.
Subprovinces 1–32, 34, 35.
Lat. 50°–59°. "British" type, or general. Not in Ireland.

Rare in Scotland, though the nest has been found as far north as Sutherland and Caithness.

RUTICILLA TITHYS (*Brehm*). Black Redstart.

Provinces V. VI.? XI.
Subprovinces 15, 16?, 24.
Lat. 52°–55°. Type, perhaps "English." Not in Ireland.

In the 'Zoologist' for 1852 (p. 3503) mention is made of a nest found at Rongdon, near Rugely, in Staffordshire; and Mr. Hewitson, who has seen one of the eggs, thinks that it can scarcely belong to any other British bird (Eggs B. B. ed. 3. p. 106).

The Rev. H. B. Tristram informs me that a nest, with four eggs, was once taken in the city of Durham.

Mr. James Tracy includes the Black Redstart in his list, as having nested in Pembrokeshire; and Mr. W. H. Slaney tells me that it has been frequently noticed in the neighbourhood of Hatton Hall during the breeding-season.

PRATINCOLA RUBICOLA (*Koch*). Stonechat.

Provinces I.–XVIII.
Subprovinces 1–36.
Lat. 50°–59°. "British" type, or general.

Ranges to the extreme north of the mainland of Scotland, and is included by Dr. Dewar in his list of the birds which he has found nesting in the Hebrides; but does not breed in Orkney and Shetland.

PRATINCOLA RUBETRA (*Koch*). Whinchat.

Provinces I.–XVIII.
Subprovinces 1–36.
Lat. 50°–59°. "British" type, or general.

Like the former, extends to Sutherland, Caithness, and Outer Hebrides; but is scarce in some districts.

SAXICOLA ŒNANTHE (*Bechst.*). Wheatear.

Provinces I.–XVIII.
Subprovinces 1–38.
Lat. 50°–61°. "British" type, or general.

Perhaps less abundant in the south; "nowhere more plentiful than in the Outer Hebrides and Orkney and Shetland Islands" (*Macgillivray*).

CALAMODYTA LOCUSTELLA (*G.R.Gray*). Grasshopper-Warbler.

Provinces I.–XIII. XIV. XVI.
Subprovinces 1–15, 16?, 17, 19–25, 26, 27, 28, 32.
Lat. 50°–56°. "English" or Southern type.

Thinly scattered through England and Wales, and breeds also in a few localities in the south of Scotland.

The bird has been killed in Kirkcudbright (*Sir W. Jardine*), and the nest taken in Wigton (*Rev. T. B. Bell*). Birds seen in Ayrshire (*Rennie*) and in Renfrew (*Mr. M. Young*). Breeds regularly in Haddington (*Mr. R. Gray*), in Edinburgh (*Mr. J. Grahame*), occasionally in Linlithgow (*Mr. T. D. Weir*), and regularly on Loch Lomond (*Mr. R. Gray*). Dr. Dewar has shot the old birds in Argyleshire.

CALAMODYTA PHRAGMITIS (*Bonap.*). Sedge Warbler.

Provinces I.–XVII.
Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

Extends to Sutherland and Caithness, but does not reach the Scottish isles.

CALAMODYTA LUSCINIOIDES (*G. R. Gray*). Savi's Warbler.

Provinces I.? III.? IV.
Subprovinces 2 ?, 7 ?, 8 ?, (12).
Lat. 50°–53°. "Germanic" type. Not in Ireland.

The Rev. H. Roundell tells me that he has obtained eggs from Kingsbridge, in Devonshire.

In the 'Zoologist' for 1850, p. 2849, Mr. J. Green, a dealer, mentions a nest taken by himself at Dagenham, in Essex. Another at Erith, in Kent ('Zoologist,' p. 3945).

Mr. H. Stevenson tells me that eggs have been found in the Norfolk marshes much resembling those of Savi's Warbler, and five birds have been killed in the county.

Mr. F. Bond informs me that the nest has many times been found in Cambridge and Huntingdonshire; but that, owing to the recent extensive draining-operations, he believes the bird has ceased to breed in the fens of Baitsbight, Burwell, and Whittlesea, where it was formerly a regular summer visitor.

CALAMODYTA STREPERA (*G. R. Gray*). Reed Warbler.

Provinces I.–X.
Subprovinces 3–22.
Lat. 50°–55°. "English" or Southern type. Not in Ireland.

More common on the eastern side of England, and does not breed in Devon and Cornwall. Extends as far north as Scarborough (*Mr. A. S. Bell*) and Lancashire (*Mr. J. F. Brockholes*).

The nest has once been taken in Haddingtonshire by Mr. Hepburn.

CALAMODYTA ARUNDINACEA (*G. R. Gray*). Great Reed Warbler.
Provinces III. IV.
Subprovinces 7 ?, 8, 12.
Lat. 51°–53°. "Germanic" type. Not in Ireland.

Yarrell, in his second Supplement, records a nest taken near Dorking; and the bird has several times been killed in Kent. Mr. F. Bond tells me that he has seen three eggs which were taken in Hertfordshire; and he himself possesses two eggs which were sent to him from Northamptonshire.

LUSCINIA PHILOMELA (*Bonap.*). Nightingale.
Provinces I.–V. VIII. X.
Subprovinces 2–15, 19, 20, 22, 23.
Lat. 50°–54°. "Germanic" type. Not in Ireland.

Nests in East Devon, Somerset, Gloucester, Monmouth, Hereford (rarely), Shropshire (occasionally), Stafford, Derby, York, and in all the counties to the east of this line.

The Nightingale is also thought to have once bred near Sunderland, and has been heard at Carlisle.

In the 'Zoologist' (p. 241) Mr. R. D. Duncan repeats his statement that a pair of Nightingales were heard, and the male shot, in Calder Wood, Mid Lothian, in the summer of 1826—a warm season.

SYLVIA ATRICAPILLA (*Latham*). Blackcap.
Provinces I.–XVII.
Subprovinces 1–28, 29, 30 ?, 31, 32.
Lat. 50°–58°. "English" or Southern type.

Rare in Scotland, though it has been found nesting in many different counties, especially of the two southern provinces. Beyond the Forth, the nest has been found in Clackmannan (*Dr. P. Brotherson*), in Perthshire (*Col. Drummond-Hay*), in Banffshire a few pairs every year (*Mr. T. Edward*), in Dumbarton (*Mr. R. Gray*), and in Ross-shire (*Mr. R. Danford*).

SYLVIA HORTENSIS (*Lath.*). Garden Warbler.

Provinces I.–VI. VIII.–XIV. XV.? XVI.?
Subprovinces 1, 2–15, 17, 18–28, 29?, 32?
Lat. 50°–56°. "English" or Southern type.

Throughout England; but scarce in Cornwall and Pembrokeshire, and I have no authority for its breeding in North Wales.

Extends to the south, at least, of Scotland, perhaps to Argyle and Perthshire.

SYLVIA CINEREA (*Lath.*). Whitethroat.

Provinces I.–XVII.
Subprovinces 1–33, 34, 35.
Lat. 50°–59°. "British" type, or general.

Scarce in the north of Scotland, though ranging to the extreme north of the mainland.

Mr. W. Dunbar describes it as nesting only occasionally in Ross, Sutherland, and Caithness; and Mr. H. D. Graham finds it breeding regularly in Mull and Iona.

SYLVIA CURRUCA (*Lath.*). Lesser Whitethroat.

Provinces I.–V. VIII.–XIV. XVI.
Subprovinces 3–15, 19–25, 27, 28, 32?
Lat. 50°–56°. "English" or Southern type. Not in Ireland.

Apparently scarce in the west of England, and does not breed in Cornwall or Devon, nor have I any authority for its nesting in Wales. Very rare in Scotland, where it has been observed in Ayrshire, Renfrew, and Lanark (see *Macgillivray*, vol. ii.). In Haddington, breeding (*Mr. A. Hepburn*). In Edinburgh. In Linlithgow, breeding occasionally (*Mr. T. D. Weir*). Mr. R. Gray believes it breeds near Loch Lomond, and he has also obtained the bird from Argyleshire.

SYLVIA SIBILATRIX (*Bechst.*). Wood Wren.

Provinces I.–XVI.
Subprovinces 1–28, 29, 30, 32.
Lat. 50°–58°. "British" or "English" type. Not in Ireland.

Throughout England; and in Scotland ranges further north than the Chiff-Chaff, having been observed by the Duke of Argyll in Argyleshire and at Balmoral. Mr. T. Edward has seen the bird in Banffshire; and Mr. J. Lamb tells me that it is common round Perth, where Mr. A. Pullar has also found the nest.

SYLVIA TROCHILUS (*Lath.*). Willow Wren.

Provinces I.–XVII.
Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

Throughout Great Britain, becoming less numerous in the north of Scotland. Found plentiful in Sutherland by Mr. Selby; and is reported by Mr. W. Dunbar as nesting regularly in Ross, Sutherland, and Caithness.

SYLVIA RUFA (*Naum.*). Chiffchaff.

Provinces I.–XIV.
Subprovinces 1–25, 26–28.
Lat. 50°–56°. "English" or Southern type.

Throughout England and Wales, and in a few counties of the south of Scotland. Sir W. Jardine marks the Chiffchaff as nesting sparingly in Dumfries. Mr. R. Gray finds it nesting near Glasgow; and the Rev. J. Duns tells me that the bird is well known in Berwickshire.

Macgillivray speaks of its having been seen in various parts of Scotland, especially the Lothians, where it is very rare. The bird is included in the 'Natural History of Dee-side,' on the authority of Mr. Brown, who describes it as occurring very rarely near Abergeldie and Micras.

SYLVIA UNDATA (*G. R. Gray*). Dartford Warbler.

Provinces I.–III. V.? VIII.?
Subprovinces 1?, 2–9, 14?, 20?
Lat. 50°–52°. "English" type, or Southern.

Confined apparently to a few counties of the extreme south of England. Montagu mentions its occurrence in Cornwall.

The nest has been found in Devon, Wilts, Dorset, Hants, Sussex, Kent, Surrey, and Middlesex.

The nest has once been taken in Oxfordshire (Zoologist, p. 2597); and Mr. J. J. Briggs has lately informed me that he has taken a nest in Derbyshire, which he believes belongs to the Dartford Warbler. Yarrell mentions its occurrence in Worcestershire and Leicestershire. It seems likely that the bird may occasionally extend its range beyond latitude 52°, until killed or driven back by an unusually severe winter. One of the species characteristic of the South-European fauna.

REGULUS CRISTATUS (*Koch*). Golden-crested Wren.

Provinces I.–XVII.
Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

Breeds as far north as Sutherland and Caithness (*Mr. W. Dunbar*), but not in the Scottish isles.

Obs.—Regulus ignicapillus (Naum.). In the third edition of Hewitson's 'Eggs B. B.' (vol. i. p. 148) occurs the remark:—"The Rev. E. H. Browne has watched this species" [the Fire-crested Wren] "during the summer near his residence at Blo' Norton, in Norfolk, and has no doubt it breeds there;" but there is too much reason to fear that the Golden-crested Wren has in this instance been mistaken for the Fire-crested, which appears to be only a winter visitant to Britain.

[To be continued.]

II.—*A few Identifications and Rectifications of Synonymy.*

By EDWARD BLYTH.

ON looking over the type-specimens of Javanese birds described or enumerated by the late Dr. Horsfield in the Thirteenth volume of the 'Transactions of the Linnean Society,' I find that several of them appertain to Australian species, with which they have only recently been identified by Mr. Swinhoe and myself.

Falco pondicerianus apud Horsfield is a race intermediate to

Haliastur indus of India proper and *H. leucosternum* of Australia, having dark central streaks to the white portion of the plumage, but considerably less developed than (constantly) in the Indian bird. An Indian specimen and a Javanese one may, at the present time, be seen together in the Zoological Gardens, Regent's Park. Of very many examples of the Indian race examined or beheld close, I certainly have never seen one that had the dark streaks or lines so little developed as in the Javanese bird, or most assuredly I should have remarked it. To what extent the Indian and Australian races may thus grade into each other, in other intermediate localities, remains to be ascertained. Examples from Siam are similar to those from Java; while specimens from Bourou, Gilolo, and Aru are of the true Australian race, without a trace of the medial stripes on the white feathers of their plumage. Mr. Gurney informs me that he thinks the Javanese race should be distinguished by the name *intermedius*. The Australian is figured by Vieillot as *Haliaëtus girrenera* (Gal. d'Ois. t. 10); but he did not discriminate it apart from the Indian*.

Haliaëtus lineatus, Gray (Hardwicke's Ill. Ind. Zool.) is erroneously assigned in the 'Ibis' (1863, p. 23) to the young of *Milvus govinda*, it being decidedly the young of *Pontoaëtus ichthyaëtus* (Horsf.) in abraded spotted plumage; for the young of this bird and of *M. govinda* are quite similarly speckled.

Accipiter (*Nisus*) *gularis*, Temm. and Schl. (Fauna Japonica), is identical with *Accipiter nisoides*, nobis, from the Malayan peninsula (three specimens thence examined), and is probably the *Falco nisus* of Sir Stamford Raffles's list of birds obtained by him in Sumatra (Tr. Linn. Soc. xiii. p. 278). Dr. Jerdon writes me word that it is not rare in the interior of the Himalaya.

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* Here it may be remarked, *en passant*, that the particular race or species of 'Plas' or 'Koklas' Pheasant to which Mr. Gould has assigned the name *Pucrasia castanea*, from Káffiristân (!), is that which Vieillot figures as his *Tragopan pucrasia*, "vieux mâle" (Recueil d'Oiseaux, t. 545). This form of Pheasant has never yet been figured correctly as regards the appearance of the crest, the black feathers of which are merely the auricular tufts of restricted *Phasianus* extraordinarily prolonged, and standing up well defined and compact (or not spreading), like horns, in the breeding-season; the brown lengthened coronal feathers lying recumbent between and entirely apart from them. Of course this imparts a most characteristic appearance to the bird, the absence of which in the published figures renders them little better than caricatures.

Poliornis pyrrhogonys (Temm., ibid.) is the same as *Buteo pygmæus,* nobis, from the Tenasserim provinces (one specimen only obtained by the late Dr. Helfer).

Falco hemilasius, T. and S. (ibid.), is identical with *Butaquila leucocephalus* (v. *Buteo aquilinus*), Hodgson, from Tibet.

"*Hierax melanoleucus* ?, Blyth," Moore's Catalogue, i. 16. "*A.* India. Donor unknown." This is the young of *H. fringillarius,* Drapiez, v. *malayensis,* Strickland (Ibis, 1863, p. 11)—a Malayan species, which extends northward, sparingly, to the southern Tenasserim provinces, where its range meets that of *H. eutolmus,* Hodgson. The *H. melanoleucus,* nobis, from Assam, is conspicuously distinct, and the specimen still remains unique. It is a larger species than the others, black above, with a broad white collar, and white below (inclusive of the tibial plumes, which are black in *H. fringillarius* and bright ferruginous in *H. eutolmus*). In fact, it is so obviously different that it could not be mistaken for any other.

Huhua, No. 83, 'Ibis,' 1863, p. 25. The species from the Himalaya, *H. nipalensis,* Hodgson, is quite distinct from, and a much larger bird than, *H. orientalis* (Horsf., v. *sumatrana,* Raffles, *strepitans,* Temminck) of the Malayan region; the latter being doubtless that of which the young (as figured by Temminck, Pl. Col. 174) was obtained by Lieut.-Col. Tickell in the Tenasserim provinces.

Bulaca sinensis; *Strix sinensis,* Latham, v. *orientalis,* Shaw. This is clearly the *S. seloputo,* Horsfield, v. *pagodaram,* Temm., of the Malayan region, spreading into the Tenasserim provinces and Siam, and doubtless into China; as distinguished from *B. ocellata* (*Syrnium ocellatum,* Lesson, Rev. Zool. 1839, p. 289) of India, which has not been observed eastward of the Bay of Bengal. Latham had merely seen a drawing from India (doubtless Hardwicke's), which he thought might refer to his *S. sinensis*; but both Latham's and Shaw's descriptions clearly indicate the Malayan species. The Indian has conspicuous rose-coloured orbits, though I see that my friend Dr. Jerdon has described them as "orange"; this, however, may depend on the age, the red colour distinguishing the young.

Eurystomus orientalis, L., is given as "a summer visitant to Southern China" by Mr. Swinhoe; but three Chinese specimens of this genus in the Derby Museum of Liverpool, collected by Mr. Robert Fortune, are of the Australian race, *E. australis,* Swainson. *Merops philippinus* was also obtained in China by Mr. Fortune. In the same museum I likewise found a specimen of *Lanius hardwickii,* Vig., marked from "China"; and one of *Nectarinia flammaxillaris,* nobis (a common Burmese species), marked "China, very rare."

Among the Philippine birds in that museum, I find *Strix candida,* Tickell (v. *longimembris,* Jerdon), *Calliope camschatkensis, Megalurus palustris,* and *Leucocerca javanica.* From Java, *Acrocephalus brunnescens,* Jerdon; and *Tiga* (v. *Chrysoptilus*) *intermedia,* nobis, identical with the common Burmese race. A *Collocalia* from the Philippines is like *C. fuciphaga,* but paler, with dull white rump, and the lower parts albescent; I think, similar to examples from the Navigators' Islands.

Halcyon leucocephalus, Gmelin. There are as many as five distinguishable races of this bird, respectively from India (*H. gurial,* Pearson), Burma, Malayan peninsula, Java, and Philippines; the name *leucocephalus* applying strictly only to the last of them. This has no dark cap whatever; the head, neck, and under parts are dingy white, slightly tinged with ferruginous, except on the crown; back, wings, and tail less deeply coloured than in the Malayan race, more as in the Indian; some dusky feathers behind the eye; wing 6½ in. The Javanese is intermediate between the Philippine and Burmese races, having a pale brownish cap not well defined. The cap is darkest in the Malayan race, wherein only it is more or less glossed with bright colouring; and this more deeply coloured race is also smaller than the others. Were it not for the intermediate races, few ornithologists would think of ranging the Malayan and Philippine under the same specific head.

Alcedo grandis, nobis (J. A. S. vol. xiv. p. 190), from Sikhim, has been erroneously assigned to *A. euryzona,* Temm., of which *A. nigricans,* nobis (J. A. S. vol. xvi. p. 1180), from Malacca, is the young. *A. euryzona* has white under-parts, crossed by a broad dark green pectoral band (whence the name, which is quite inapplicable to the other), much as in the small *A. beryl-*

lina (v. *biru*); whereas *A. grandis* is like *A. ispida* and *A. bengalensis*, but much larger, with the coronal spots of a paler and different blue, and no rufous on the ear-coverts. Length of bill to forehead 2 in.; of closed wing 3¾ in. The specimen described appears still to be unique.

The *Chrysocolaptes* from Ceylon, noticed in the 'Ibis,' 1863, p. 267, is *C. carlotta*, v. *Indopicus carlotta*, Malherbe.

Picus analis, Horsfield. To this species I find must be referred the *P. pectoralis*, nobis (J. A. S. vol. xv. p. 15), which I obtained out of a collection of otherwise Australian specimens *.

Cuculus canorus apud Horsfield is, of course, *C. canoroides*, S. Müller, v. *canorinus*, Cabanis; and is also identical with *C. optatus*, Gould, of North Australia, which has erroneously been assigned to *C. micropterus* of India. To the same race must doubtless be referred Mr. Swinhoe's "second series" of Cuckoos, noticed by him under *C. canorus*, "with fulvescent under-parts, banded with much broader bars more widely set [than in true *canorus*], and with the axillaries nearly barless." Mr. Hodgson's specimens referred to *micropterus*, in the India Museum, I find to pertain to the similar but considerably larger race or species, *C. striatus*, Drapiez (apud Jerdon, *C. affinis*, A. Hay). The true *C. micropterus* I observed abundantly in the Tenasserim provinces during the rainy season; and there is a specimen of it in the Derby Museum of Liverpool, from Java: so that either race may yet prove to be the veritable *C. striatus* of Drapiez.

C. basalis, Horsfield, is *Chrysococcyx lucidus* (Gm.); and there is an example of the same received in a collection from Singapore (that contained only Malayan specimens) in the Calcutta Museum.

C. malayanus, Raffles (Tr. Linn. Soc. vol. xiii. p. 286), appears to be the young of *Chrysococcyx xanthorhynchus*, Horsf., in the green plumage which precedes the amethystine-purple garb, in which and in the hepatic phases I know not how to distinguish it from *C. hodgsoni*, Moore; for I have seen specimens moulting from dullish shining green and more or less hepatic plumage to purple; but the purple bird I have only seen from the Malayan region and Southern Tenasserim provinces, and the deep and vivid green only from India and Burma, as far south as Moulmein, where I obtained a specimen. Raffles's Sumatran bird I know from his coloured drawing of it in the India Museum now at Fyfe House.

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* *P. andamensis*, nobis, I have lately seen in a collection from Sumatra.

C. orientalis of Horsfield is *Eudynamys australis*, Swainson (erroneously referred to *E. flindersi* in Gould's 'Birds of Australia'). This has already been remarked by the late Prince of Canino, who adopts the name *orientalis* for the Australian species. In the Derby Museum of Liverpool are three examples of *E. australis* from China collected by Mr. Robert Fortune; so that this may prove to be the Chinese *E. orientalis* of Mr. Swinhoe. The Coels I have seen from the Malayan peninsula were, however, of the true Indian species, at least so far as I can remember; and as I have long been familiar with both species, I could not well have mistaken them.

C. fugax, Horsfield, is not the common Indian species, *C. varius*, Vahl, with which it has been supposed identical, but is erroneously figured as *C. sparverioides* by Von Schrenck (as already noticed by Mr. Swinhoe), being the Chinese species referred to by Dr. Jerdon as "very similar to *Hierococcyx sparverioides*, but smaller" (Birds of India, vol. i. p. 331).

Harpactes orescius, Temm. This, as obtained by Mr. Wallace in Java, is a conspicuously different species from the *H. orescius* apud Gould, figured in his first monograph of *Trogonidæ*. The latter is common in parts of Burma, and is the *H. orescius* apud nos (*passim*), following Gould, of that region.

Corvus enca, Horsfield. The type-specimen in the India Museum is a young bird in the first or nestling plumage. I consider it to be identical with *C. macrorhynchus*, Vieillot (nec Temminck), and *C. tenuirostris*, Moore; the latter erroneously supposed to be from Bombay. This species is not unfrequently contained in Malaccan collections. Very decidedly it is not an Indian bird; and the skin described by Mr. T. Moore (now in the British Museum) was prepared in the peculiar way by which Malaccan specimens may be generally recognized. In collections from Penang and Malacca the Indian *C. culminatus* (closed wing

12 in.) also occurs; distinct from *C. macrorhynchus,* Temm. (nec Vieillot, *corax* apud Raffles), of Sumatra and Java.

Pastor tricolor, Horsfield, is *P. melanopterus,* Daudin, and *Sturnia burmannica,* Jerdon (Ibis, 1862, p. 21); common in Upper Pegu.

Brachypteryx sepiaria, H., is a *Trichostoma,* identical with *Malacopteron olivaceum,* Strickland, from Malacca, not with the Javanese *Alcippe,* with which I formerly supposed it identical.

Sylvia montana, H., is a typical *Horornis,* hardly differing from *H. fulviventer,* Hodgson, but of a darker hue, and without any tinge of tawny.

Dicæum flavum, H., is a *Zosterops,* which also inhabits the Philippines; but I now doubt its identity with the species from Moulé-yit mountain, in South Burma, which (if I remember rightly) only differs from the Indian *Z. palpebrosus* (T.) by having the abdominal region yellow. *Z. flavus* is considerably smaller, the closed wing measuring 2 in., and the tail 1¼ in., but is otherwise like *Z. palpebrosus,* except in having the entire under parts yellow.

Ortygis luzoniensis apud Horsfield is *Turnix dussumieri* (T.), v. *joudera,* Hodgson; but I only knew previously of this species as an inhabitant of Bengal and Upper India. In South India it is generally replaced by *T. sykesi,* A. Smith, which occurs rarely in Lower Bengal, being the supposed *dussumieri* of Sykes and of Jerdon's first catalogue; while in Arakan and Pegu it would appear to be replaced by *T. maculosa* (T., v. *blanfordi,* nobis), a Chinese species, which is doubtless also *T. joudera* apud Swinhoe (Ibis, 1861, p. 50).

Of the three Bengal species of this genus, *T. pugnax* (T., ♂ *taigoor,* Sykes, ♀ *atrogularis,* Eyton) has bluish lead-coloured tarsi and toes, *T. dussumieri* has them yellow, and *T. sykesi* pinkish white, or what the fair-complexioned races of mankind denominate "flesh-coloured" or "carneous"; but the *Puyu* of Raffles is not only described by him, but is figured in one of his drawings as having the plumage of *T. pugnax,* with yellow legs! *T. dussumieri* is a diminutive of *T. maculosa,* as *T. sykesi* is a miniature of the South-European, North-African, and West-Asian *T. andalusica,* and *T. pugnax* of the Chinese and Philippine *T. ocellata* (Scopoli, v. *luzoniensis,* Gm., and *thoracica,* Temm.), the last being, however, further conspicuously distinguished by its ferruginous broad collar and breast. These make six Asiatic species; and the yellow legs of Raffles's *Puyu* I cannot help suspecting to be a mistake, and that the ordinary *T. pugnax* is intended. In all, the females exceed the males in size; and the two blue-legged species have a broad black gular stripe in the female only, which, in this genus, is the pugnacious sex.

Charadrius asiaticus, Horsfield, is *C. geoffroyi,* Wagler; *leschenaultii,* Lesson; *fuscus,* Cuvier (MS.); and *rufinus,* nobis.

C. cantianus apud Horsfield is *C. mongolicus,* Pallas; *ruficollis,* Cuv.; *pyrrhothorax,* Temm.; *cirrhipedesmos,* Wagler; *sanguineus,* Lesson; and *rufinellus,* nobis.

C. pusillus, H., is *C. philippinus,* v. *minor*; nec *pusillus* apud Jerdon, which is probably *C. peronii,* Temm.

Cursorius isabellinus apud Horsfield is *Charadrius xanthocheilus,* Wagler (nec Gould), v. *C. veredus,* Gould, and *C. fulvus,* var. *β,* Latham. A rare species in collections.

Totanus tenuirostris (!), Horsfield, is *Schœniclus magnus,* Gould, v. *Tringa crassirostris,* Temm. and Schlegel.

T. acuminatus, H., is *S. australis,* Gould. Horsfield's specimens of these three Waders have been compared at the British Museum by Mr. G. R. Gray and myself, and Horsfield's names claim priority; as also the name *damacensis,* H., for *Tringa subminuta,* Middendorff, which Mr. Swinhoe correctly identifies with *T. minuta* of my Catalogue of Birds in the Museum of the Asiatic Society, Calcutta. It is unfortunate that the names are not more characteristic, the *Tringa tenuirostris* (H.) being actually the *T. crassirostris* of the 'Fauna Japonica,' where the species is noted from Java, Borneo, and Japan.

An instance of a small Australian Wader straggling to South India occurs in the *Charadrius nigrifrons,* Cuvier, which is *C. russatus,* Jerdon, " Catal." The specimen is now in the Calcutta Museum.

Sundry Australian Waders are admitted by Mr. Gould to be identical with species inhabiting the northern hemisphere. Such are *Glareola orientalis* (the young only figured), *Squatarola helvetica, Strepsilas interpres, Tringa subarquata, Glottis chloropus* (*glottoides*), *G. stagnatilis*, *Terekia cinerea*, *Falcinellus igneus*, *Mycteria australis*, and *Ardetta flavicollis*, all of which are more or less common in Bengal in the cold season; and to their number may be added several others, most of which I long ago identified in my Catalogue of the Birds in the Calcutta Museum.

Glottis glottoides (Vigors), adopted by Mr. Gould, is merely the winter dress of *G. chloropus* (Meyer), the common European and Indian Greenshank*.

Himantopus leucocephalus, Gould. Examples of this bird quite similar to those figured in the 'Birds of Australia,' and to others which I have seen from this region, are not unfrequently obtainable in Lower Bengal in the same flocks with the common *H. candidus* (seu *melanopterus*). Great numbers of Longshanks are brought to the Calcutta provision-bazaar, often several dozens of them of a morning, during the season of their stay. Of these the great majority have a sooty-brown occiput, which changes to black at the approach of the breeding-season; but occasionally one then occurs with a purely white head and neck, or with more or less black down the nape, sometimes a mere trace of it, and sometimes the black nape is well developed (though never to the extent that is constant in the American species), and this may or may not be accompanied by the black occiput. I have also seen purely white-headed and white-naped specimens from Egypt, and one male from that country with just an indication of the dark nape; there is one with black nape and occiput among the British-killed specimens in the British Museum, and I have seen others like it from Europe and North Africa. Whether the *leucocephalus* type be constant in Australia remains to be ascertained; and the most likely explanation of this extraordinary and anomalous variation is, that differentiated races of this bird have more or less commingled. Most assuredly it can neither be referred to difference of age nor of season.

Limosa melanuroides, Gould. This I consider to be merely a small-sized male of *L. ægocephalus*. Examples of this size may be procured abundantly in Bengal, with others (females) much larger, and some perhaps even twice as heavy, in the same flock, and others of both sexes intermediate, though the female is always the larger *. The same extraordinary variation of size occurs in *Numenius major,* which is the hitherto supposed *N. arquata* of India.

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* Mr. Swinhoe, I observe, identifies *Tringa empusa*, Gould, with *T. hypoleucos*.

Hæmatopus longirostris, Vieillot, as figured by Mr. Gould, is (I think) identical with the species inhabiting the Bay of Bengal, as also with the Pied Oyster-catcher of China (Swinhoe).

The *Pluvialis* erroneously assigned to *Charadrius xanthocheilus,* Wagler, by Mr. Gould (after Jardine and Selby, 'Ill. Orn.'), is considered identical with the Indian race (*P. longipes,* Prince Bonap.) by MM. Temminck and Schlegel (Faun. Japon.), who term it *C. pluvialis orientalis,* and note it likewise from South Africa, Java, Borneo, Celebes, Timor, and Japan. It is also commonly sent in the Malaccan collections, and abounds in India during the cold season.

Ardea rectirostris, Gould, is *A. sumatrana,* Raffles, *A. typhon,* Temminck, *A. fusca,* Blyth, and *A. insignis,* Hodgson; but it is not *A. nobilis,* Blyth, as assigned by Dr. Schlegel, which = *A. goliath,* Temm.

A. leucophæa, Gould, is identical with *A. cinerea,* L. (*A. bruh,* Jacquemont), alike over the major continent and its islands.

Herodias syrmatophorus, Gould, from Australia and New Zealand, does not differ (that I can perceive) from *H. modesta,* Gray (Hardwicke, 'Ill. Ind. Zool.'), of Asia and Africa, which is very common in India; and I have seen no specimens referred to *H. alba* (L.) which were in any respect different. As regards size, the males are larger than the females; and as respects the colouring of the bill, this becomes black in the breeding-season, and is yellow at other times and in the young. This species has neither occipital crest nor pendent breast-plume, and the dorsal train is comparatively short. The bill becomes black before the train is developed, and changes again to yellow before the train is shed; so that both black-billed and yellow-billed individuals may be obtained with or without the dorsal train, and others with the bill changing colour in all stages of progress,—the same remarks applying to the next species. In *H. alba* (*modesta*) the loral skin becomes of a bright verditer colour during the breeding-season. More or less of the upper part of the bare portion of the tibia is always whitish.

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* There is an Himalayan example of *L. rufa* in the Derby Museum of Liverpool, presented by Col. Everest. Mr. Hodgson also obtained the species in Nepal. In the Derby Museum there is also a fine specimen of the rare Javanese Woodcock, *Scolopax saturata,* Horsfield, marked *S. russata.*

H. plumifera, Gould, is *H. egrettoides* (S. Gm., nec Temm.), figured in the 'Fauna Japonica,' *H. intermedia* (Wagler) of my catalogue, and *Ardea garzetta* apud Sykes; only that the upper portion of the naked tibia is never whitish in the Indian bird, as represented by Mr. Gould, nor was it so in some Australian specimens which I have examined. In this species the bill is comparatively short; there is no occipital crest, but pendent neck-plumes over the breast, of similar open texture to those of the train, which last are very long and quite straight, passing far beyond the tail-tip, and never curling up at the extremity as in *H. garzetta* (L.). This and the preceding species are highly gregarious, commonly associating in the same great flock; but I observed only the present one in Burma: at Rangoon there is a considerable colony of *H. egrettoides*, and many may commonly be seen there in open places within the confines of the town, being hardly less familiar than *H. garzetta* is in India.

H. immaculata, Gould, is *H. eulophotes*, Swinhoe, and *H. melanopus* (Wagler) apud nos (Journ. As. Soc. vol. xxii. p. 437). It occurs in the southern Tenasserim province of Mergui, being rather smaller than *H. garzetta*, with much shorter toes, the dorsal train short and straight, or showing but the slightest tendency to recurve, and not passing beyond the tail-tip. Occipital crest consisting of a longitudinal series of numerous lengthened slender plumes, similar to the two or three composing the crest of *H. garzetta*, but not so long, the longest measuring about 3½ inches. Pendent breast-plumes as in *H. garzetta*. Beak from forehead 3⅛ in.; tarsi 3½ in.; middle toe and claw 2½ in.; hind toe and claw 1 in.; closed wing 10 in. The foregoing description is from a Mergui specimen; and Australian examples quite agree. In the 'Ibis' (1861, p. 245) Capt. Irby notices this species in Oude, remarking that "the breast-plumes in the breeding-plumage are few in number, but thick in texture, and [similar plumes are] scattered down the neck [nape], not springing from one place as in *H. garzetta*." It is necessary to interpolate the passage as above.

H. pannosa, Gould, I take to be *Ardea asha*, Sykes, of South India and Ceylon, if not also *A. gularis* of Rüppell; but *A. gularis* of Raffles's drawings, from Sumatra, is a species also inhabiting the Nicobar Islands and Arakan, which I have named *H. concolor*.

Ardea melanolopha, Raffles, from Sumatra, is the young of a peculiar species, which I have also seen from Malacca, Arakan, Ceylon, and the Philippines. With *A. goisagi*, T. and S., from Japan, and others, it is one of a peculiar group intermediate to *Botaurus* and *Nycticorax*; *Gorsachius*, Pucheran. These birds have the general character of *Botaurus*, with the short neck and the short hooked claws of *Nycticorax*. The adult of *G. melanolophus* is similar to that of *P. goisagi*, but has a long black crested pileus at all ages. Closed wing 10 to $10\frac{1}{2}$ in.; bill 2 in. to forehead; tarsi $2\frac{5}{8}$ to $2\frac{3}{4}$ in. An unusually small specimen from the Philippines has a proportionally smaller bill, and the general colouring more dusky. Wing 9 in.; bill to forehead $1\frac{5}{8}$ in.; and tarsi $2\frac{1}{4}$ in. *G. goisagi*, from Japan, has no black on crest at any age. Wing 10 in.; bill $1\frac{3}{8}$ in. to forehead; and tarsi $2\frac{3}{8}$ in. Specimens of both are in the Derby Museum, Liverpool; as also of a small third species from South America, the specific name of which I did not make out.

There are, again, four distinct oriental races of *Ardeola*:—1. *A. leucoptera*, of India and Burma, of which *A. grayi* (Hardw., 'Ill. Ind. Zool.') represents the summer dress; 2. *A. speciosa*, Horsf., of Java; 3. *A. malaccensis*, of the Malayan peninsula and Sumatra, which is intermediate to the two preceding; and 4. *A. prasinosceles*, Swinhoe, of China. In winter dress, all of these, with *A. ralloides* (v. *comata*) of Africa chiefly, are barely, and in some instances not at all, distinguishable, though conspicuously separable when in breeding-costume.

Dendrocygna vagans, Eyton (Fraser's 'Zoologia Typica'); *D. gouldi*, Bonap.; *Anas javanica*, var., Horsfield (Linn. Trans. vol. xiii. p. 200); *A. arcuata* apud Horsfield, figured in 'Zool. Res.

in Java,' and Gould, B. Austr. *Hab.* Java, Philippines, and North Australia. In the India Museum are two species of this genus collected in Java by Dr. Horsfield, and which were discriminated by him as two varieties of his *A. javanica*, subsequently identified by him with *A. arcuata*, Cuv. The other variety is *D. arcuata* (vera), v. *Mareca awsuree*, Sykes; being currently designated "Widgeon" by Anglo-Indians. The latter is exceedingly common throughout India, Burma, and the Malay countries; whereas *D. vagans* is unknown in India, and probably belongs chiefly to Northern Australia. *D. major*, Jerdon, has only hitherto been observed in India properly so called*; and *D. vagans* is much such a bird as might result from a cross between *D. major* and *D. arcuata.*

Certain of Mr. Gould's Australian Terns appear to be identical with previously described species inhabiting the shores of the Indian Ocean. Thus—

Sylochelidon strenua, Gould, does not differ from specimens of *S. caspia*, from India and Africa, with which I have compared it.

Thalasseus pelecanoides, King, apud Gould, I take to be *Sterna cristata*, Stephens (nec Swainson), and *S. velox*, Rüppell. This species I have seen from the Tenasserim coast and from the Maldives.

T. torresii, Gould, is *Sterna media*, Horsfield, *bengalensis*, Lesson, *affinis*, Rüppell. As an Indian bird, I have only seen it from the southern portion of the Bay of Bengal. It is often contained in collections from Malacca, and it is the *Sterna* No. 402 of Dr. Jerdon's first Catalogue.

Sterna gracilis, Gould, I have been unable to compare with *S. dougalli*, Montagu, with which it would seem, judging from the figures, to be identical. *S. dougalli* is stated to occur on the Coromandel coast, but I have not seen an Indian specimen; so perhaps this may be Gould's Australian species, supposing the latter to be really different from the European one.

Both *Onychoprion anasthætus* (Scopoli, v. *panayana*, Gmelin) and *O. melanauchen* (Temm.) occur in the Bay of Bengal, the latter especially about the Nicobar Islands, where it is said to breed, the young being the *Sterna marginata*, nobis (J. A. S. vol. xv. p. 373). Also *Anous stolida* and *A. tenuirostris, Phaëton æthereus, Sula fusca*, and *S. piscator* more rarely; but these are oceanic birds, of more or less general diffusion in intertropical seas chiefly. Mr. Gould's *Anous melanops* and *A. leucocapillus* do not appear, either of them, to be identical with *A. tenuirostris* of the Indian Ocean.

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* We believe Mr. Sclater has recently recognized it in a collection from Madagascar.—Ed.

Assuming that the whole, or that very nearly the whole, of the foregoing identifications are correct, it follows that a large proportion of the wading birds, and several of the Terns, which have been supposed to be peculiar to Australia are more or less common to South-eastern Asia or to the various countries bordering on the Indian Ocean, some of them, however, undoubtedly occurring more or less as stragglers on either side, which further observation is required to decide in certain instances. In the extreme east of Asia others of the erratic Waders of Australia may possibly turn up, as *Numenius uropygialis*, Gould, *Limosa uropygialis*, Gould, and *Tringa albescens*, T., which, with others, have occurred to Mr. Swinhoe; and it diminishes the surprise that so many of the Australian species should have been obtained by Dr. Horsfield in Java. The *Totanus brevipes*, Vieillot (*pulverulentus*, S. Müller, *griseopygius*, Gould), according to the authors of the 'Fauna Japonica,' has been received from North Australia, Timor, Borneo, Ceram, Japan, and both sides of the North Pacific*.

Mr. Swinhoe has shown that certain of the migratory land-birds of China pass southward to spend the winter in the Malayan peninsula, Java, and the Philippines. Thus the *Erythrosterna erythaca*, nobis, procured in Pinang, proved to be the female of *Muscicapa luteola*, Pallas, as figured by Middendorff;

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* In the islands immediately to the north of Australia, from Celebes eastward, Mr. Wallace has noticed *Glareola grallaria, Esacus magnirostris, Numenius uropygialis*, "*Egretta syrmatophora*" (*alba*), "*E. nigrirostris*, Gray" (*egrettoides*), *Nycticorax caledonicus*, and *Tadorna radjah* (*vide* P. Z. S. 1862, p. 346; 1863, p. 35). The *Scythrops novæ-hollandiæ* is an Australian species which migrates to Celebes, like *Cuculus canoroides* (*optatus*) in China and Java, *Chrysococcyx lucidus* in Java and the Malayan peninsula, and *Eudynamys australis* in China and Java (and Sumatra apud Bonaparte), among the *Cuculidæ*.

and the male of the same bird is identified by Mr. Swinhoe with *M. muginaki*, Temm. and Schl., of the 'Fauna Japonica.' The *Ruticilla leucoptera*, nobis, from Malacca and Java, is the true *R. aurorea* (Pallas), v. *R. reevesii*, Gray, of China and Japan, also occurring rarely in Assam. *Xanthopygia tricolor* (Hartlaub), v. *X. leucophrys*, nobis, is another Chinese bird which occurs rarely in Malaccan collections; but I leave to Mr. Swinhoe's future researches the further development of instances of this migration*.

I should add that *Sterna affinis*, Horsf., is *Gelochelidon anglica* (Mont.); and that *S. javanica* and *S. grisea* (H.) are the summer and winter dress of *Hydrochelidon indica* (Stephens), v. *hybrida*, Pallas, *leucopareia*, Temm., &c. *S. javanica* has been erroneously identified with *S. melanogaster*, Temm., and with *H. fissipes* (v. *nigra*) by Mr. Swinhoe in the 'Ibis,' 1863, p. 97.

Of Colonel Sykes's Dukhun specimens in the India Museum, *Pratincola bicolor* (♂ *Saxicola bicolor* and ♀ *S. erythropygia*, Sykes) is identical with *P. atrata*, nobis, of S. India and Ceylon;

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* In the 'Ibis,' 1863, p. 92, Mr. Swinhoe mentions the *Xanthopygia leucophrys*, Blyth, "of India." The species bears the prior name of *Muscicapa tricolor*, Hartlaub; and it occurs rarely (and doubtless as a winter visitant only) in the Malayan peninsula, but certainly not in *India* properly so called. *Sturnus dauricus*, Pallas, is assigned to "India and Java" at p. 95. This bird also inhabits the Malayan peninsula and southernmost Tenasserim province of Mergui, as likewise the northern part of Sumatra, but is quite unknown in *India*. *Chibia hottentota* (L.) "of the plains of India" (p. 96) is there known as a winter visitant only. There must surely be some mistake about *Fregilus graculus* occurring in Java (p. 95)! No specimen of this bird supposed to be from Java is in the "India Museum"; and it is most unlikely to occur anywhere within the tropics. *Phylloscopus fuscatus* (p. 93) was so named by myself, not by Mr. Hodgson; and *P. coronatus* of Japan is very closely akin to *P. occipitalis*, nobis, of India, but differs by its white lower tail-coverts and one or two other minute particulars, as the development of the minute first primary, sufficient to permit of ready discrimination. *Cypselus subfurcatus*, nobis, is stated by Mr. Swinhoe (p. 254) to have a "less furcate tail than its near ally, *C. affinis*, J. E. Gray, from continental India." This is a mistake. The tail of *C. affinis* is not at all furcate, whilst that of *C. subfurcatus* is slightly so. Specimens of the latter from Pinang are undistinguishable from those from China; and the supposed *Hirundo urbica* (apud Raffles), from Sumatra, is in all probability no other.

the large Nilgiri race of *P. caprata* apud Jerdon, 'Catal.,' and 'Newera Elia Robin' of my late friend Dr. Kelaart. The range of *P. caprata* (vera) extends eastward as far as Timor.

Saxicola rubeculoides, Sykes, is the European *Erythrosterna parva* (Bechst.), as distinguished from the *E. leucura* (Gmel.), so very common in Lower Bengal during the winter months, as also in Arakan. I have also seen *E. parva* (vera) from the Deyra-doon (or neighbouring lower Himalaya); but the two cannot be distinguished in their winter aspect, or the females ever. In the cold weather, the males of *E. leucura* may generally, if not always, be distinguished by having some trace of rufous about the chin; and at the commencement of the hot weather a well-defined rufous gular mark gradually developes itself, the feathers composing it changing their colour, without moulting, till they attain the full orange-rufous hue of the breast of a European Robin, the extent of this rufous being invariably the same, and very much less than in *E. parva*, wherein it spreads over the breast.

Rhipidura fuscoventris apud Sykes is *Leucocerca pectoralis*, Jerdon. This removes the only authority for the alleged occurrence of *L. fuscoventris* (Franklin) in S. India.

Hypsipetes ganeesa, Sykes, is the same as *H. nilgiriensis*, Jerdon, the former name having, of course, the priority. This bird differs, however, merely by its darker general hue from *H. psaroides*, Vigors, of the Himalayan region, and Ceylonese specimens are even intermediate; while the *H. concolor*, nobis, from Tenasserim comes again exceedingly close. *H. ganeesa* from Assam (Ibis, 1863, p. 288) is *H. psaroides*. It is remarkable that this bird should be paler in Ceylon than in S. India; for in other instances birds are darker-coloured in Ceylon, as especially *Corvus splendens* and *Acridotheres tristis*.

Palæornis modestus, Fraser (figured in 'Zoologia Typica'), is not the young of *P. longicauda*, as assigned in the 'Ibis,' 1862, p. 5, but is certainly a young bird, and in my opinion (after examination of the original or type-specimen in the British Museum) is decidedly referable to *P. luciani*, Verreaux*.

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* Mr. Fraser, in his 'Zoologia Typica,' has figured the nest and eggs of *Prinia socialis* for those of *Drymoipus inornatus*. His figure of *Oriolus kundoo*, Sykes, represents an immature individual, the colouring of the

P. affinis, Gould (Birds of Asia), is very decidedly the young of *P. longicauda*, which I formerly designated as *P. viridimystax*. I have examined the type-specimen of *P. affinis* in the Derby Museum of Liverpool.

Artamus cucullatus, Nicholson (P. Z. S. 1851, p. 195, Aves, pl. 43), is ♂ *Sylvia orphea*, Temm. (♀ *Curruca jerdoni*, nobis, *passim*), being founded upon a bad native drawing which Dr. Sclater kindly showed to me.

Ixus fisquetii, Eydoux and Souleyet (Voy. de la Bonite, Atlas), is *Brachypodius poiocephalus*, Jerdon.

Merula leucogaster, nobis (J. A. S. xvi. p. 153), is founded upon a drawing of a dark-coloured adult male of *Turdus atrogularis*, Natterer.

Tephrodornis grisola, nobis, is *Hyloterpe philomela*, Cabanis, *Hylocharis philomela*, Temm., which Mr. Wallace considers akin to *Pachycephala*. This bird I once shot near Calcutta, and it has been received from Arakan and the Andaman Islands; but it belongs chiefly to the Malayan region.

Butalis hypogrammica, Wallace (Ibis, 1862, p. 350), is *Hemichelidon griseosticta*, Swinhoe (Ibis, 1861, p. 330).

Timalia pileata of M'Clelland's list (P. Z. S. 1839, p. 161), as shown by the drawing of it at Fyfe House, is *Stachyris ruficeps*, nobis; but the former might also be well obtained in Assam, as it occurs in the Nipal *tarai*, and is common in the Bengal Sundarbans. *T. pileata*, from Java, I find to be paler than in India, the tail browner, with the barring scarcely perceptible.

Abrornis melanops, Jerdon and Blyth (P. Z. S. 1861, p. 200), is *A. schisticeps*, Hodgson (nec *schisticeps*, Bl., which is *xanthoschistos*, Hodgson).

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adults of both sexes corresponding with that of *O. galbula*, except that *O. kundoo* has always a black mark behind the eye, and the bill is larger and differently shaped from that of the European species. In all the Orioles known to me, the sexes are alike when fully adult, except that the females are not quite so bright upon the back: they breed (the females at least) before assuming the mature livery. (*Vide* Mr. Swinhoe's remarks on the plumage of *Oriolus chinensis*.)

Sylvia sibirica, Middendorff, is a synonym of *Phylloscopus fuscatus,* nobis; and *P. tristis,* nobis, has been shown by Sir W. Jardine to be identical with *Sylvia brevirostris,* Strickland, obtained by himself in Asia Minor.

Propasser frontalis, nobis (Ibis, 1862, p. 290; J. A. S. xxxii. p. 458), is *P. thura,* Bonap. I had considered the female of another species to be that of *P. thura*; and there are now females of two well-marked species of this genus in the museum of the Asiatic Society, Calcutta, the males of which are unknown to us as yet. One of them is described in J. A. S. xxxii. p. 458 as *P. murrayi,* nobis.

Burnesia lepida, nobis, of India, is undistinguishable from *Malurus gracilis,* Rüppell, of N.E. Africa, the latter specific name holding precedence. This little bird is sufficiently separable from *Suya,* in my opinion.

Examples of *Cyanecula, Cisticola,* and *Passer,* also, from Nubia, appear to be quite identical with the ordinary Indian species.

Dumetia albogularis, nobis, = Flaxen Warbler, *Sylvia subflava,* var., Latham. This form is barely separable from *Pellornium.*

Cisticola tytleri, nobis. Marked "N. S. Wales? Buff-headed Warbler, Lath., Syn. i. pp. 135, 164," in the Derby Museum.

Notodela diana, Lesson, is perfectly congeneric with *Muscisylvia,* Hodgson, as I suggested long ago. The generic name *Ajax,* Lesson, must be adopted.

Muscicapa elegans, Temm. = *Phœnicura rubeculoides,* Vigors (type of *Cyornis,* nobis; of which group *M. hyacintha* and *M. concreta,* Temm., are the finest examples).

Siphia superciliaris of my Catalogue (no. 1009), *S. rubrocyanea,* Hodgson, = ♂ *Muscicapa tricolor* and ♀ *M. rupestris,* Müller, both from Timor. Quite undistinguishable from Himalayan specimens.

Erythrosterna maculata (Tickell), *Muscicapula melanoleuca,* nobis, *passim*; also from Timor.

Muscicapa solitaria, Müller, from Timor. An *Anthipes,* with hind claw more curved than in *A. gularis,* nobis. Brown above, with rufous front, lores, and cheeks, pure white gular mark, and white belly.

Grandala cœlicolor, Hodgson. The *Sialia arctica,* Swainson, approximates very closely to this remarkable Himalayan bird, which seeks its food along the border of the snow-line.

Osmotreron flavogularis, nobis (J. A. S. xxvi. p. 225, xxxi. p. 334). This is identical with *O. pompadora* apud Bonaparte (Iconographie des Pigeons), and with *Vinago aromatica* apud Selby, in the volume of "Pigeons" in the 'Naturalist's Library.' *Sphenocercus cantillans*, nobis (*passim*), figured also by the late Prince of Canino, is merely *S. sphænura*, the common *Kokhela* of the Himalaya, after moulting in captivity, when the green of its plumage is more or less completely replaced by delicate pearl-grey, as was long ago remarked by my friend Captain Thomas Hutton, of Masuri.

The Derby Museum of Liverpool is rich in Philippine birds (collected by Mr. Cuming), and also in the avifauna of the Indonesian archipelago. I went carefully through its collections in every class, and took many notes of the birds of S.E. Asia and its islands, which I transmitted to my friend Dr. Jerdon. A few, apparently undescribed, species may be here noticed; and a further selection of my memoranda taken chiefly there, and some in the museum of the Royal Institution of that borough.

Cypselus acuticauda, nobis, n. s. Specimen marked from "Nipal. Length 7¾ in.; extent of wings 20 in.;" closed wing 6½ in. Size and proportions of *C. apus*; the tail forked to the depth of an inch, and much more sharply acuminate than in *C. apus*. Entire upper parts, with the lower tail-coverts, *deep* black, having a slight metallic gloss; each feather of the lower parts (excepting the lower tail-coverts) margined with dull white; throat white, with a black medial streak to each feather; claws more or less whitish. From *C. leuconyx*, nobis, of the N.W. Himalaya chiefly, this species differs in the absence of the white band crossing the rump. The true *C. apus* has been received from Afghanistan.

Dendrocitta himalayensis, nobis. This is the common Himalayan bird which has hitherto been referred to *D. sinensis* (Gmel.). The latter is well distinguished from it, having a comparatively short tail, the middle feathers of which are black throughout; brightly glossed margins to the wing-feathers; and the white wing-spot is much less developed. The two races have far better claims to be thus distinguished than many that are generally recognized.

Dicrurus marginatus, nobis, n. s.? Ashy, with dusky black wings and tail, scapularies, and ear-coverts; the outer web of the exterior tail-feather white; bill muscicapine, the culmen rounded. Length, to tip of middle tail-feather, about 8 in.; closed wing $4\frac{5}{8}$ in.; bill to gape $\frac{3}{4}$ in.; tail forked to the depth of an inch. *Hab.* —— ?

Passer canicapillus, nobis, n. s.? Size and proportions of *P. flavicollis* (Franklin), but with contrasting grey cap and rufous-brown supercilia; the upper parts brown, with no ferruginous on shoulder of wing, nor white bar crossing it; throat, belly, and lower tail-coverts white; the lores, ear-coverts, and breast brown; yellow neck-spot as in *P. flavicollis. Hab.* —— ? A third species of this particular subdivision of Sparrows with slender Chaffinch-like bill and yellow neck-spot; the second being the African *P. petronella* (Bonap.), v. *Gymnornis superciliaris,* nobis, *passim.*

Garrulax rubiginosus, nobis, n. s. Entirely of a dusky-ruddy hue, with black cap and ashy supercilia, cheeks, chin, and moustaches; wings browner, and tail glossy dusky; bill light yellow; legs pale. Length 10 in.; closed wing $4\frac{1}{2}$ in.; tail $3\frac{1}{2}$ in.; bill to gape $1\frac{1}{4}$ in. *Hab.* —— ?

G. poliocephalus, nobis, n. s. Dark ruddy; blackish on back and breast; head and neck dingy light grey; lores darker; bill pale yellow. Wing 5 in. *Hab.* —— ?

Philentoma unicolor, nobis, n. s. Similar to *P. velata* in size and structure, but wholly of the same blue as the head and neck of that species, except the copious downy feathers of the flanks posteriorly, which are white. From Borneo.

Timalia quadristriata, nobis, n. s. Akin to *T. leucotis,* Strickland, figured in Jerdon's 'Contr. Orn.' (1848). Brown above, with a slight tinge of ferruginous; below tinged with bright ferruginous: cap, lores, and chin fuscous; a whitish moustachial spot, and broad blackish supercilia, margined above and below with white. Length about 5 in.; wing $2\frac{1}{4}$ in.; tail 2 in. *Hab.* —— ? Probably Malacca or Sumatra.

T. bicolor, nobis, n. s. Like *T. erythroptera,* nobis; but dark ashy, with rufous mantle, wings, and tail. Prepared like the Malaccan specimens.

T. similis, Temm. A *Mixornis,* like *M. gularis* (Horsf.); but rather larger, with more graduated tail, and the back about uniform brown with the cap and wings; forehead grey; throat white, with black stripes; and rest of lower parts yellowish, striped as in *M. gularis.* From Sumatra.

Myiothera nigrogularis, Temm. A typical *Turdinus,* nobis, and the largest of the genus. Sumatra.

M. murina, S. Müller, n. s. Also a true *Turdinus,* and the smallest of the genus. Plumage as in its congeners, with long white supercilia, and white spots tipping the wing-coverts. Length 4½ in.; wing 2 in.; tail 1 in.; bill to gape ¾ in. Sumatra.

M. grisea, Müller (?), = *Trichostoma sepiaria* (Horsf.) and *Malacopteron cinereum,* Strickland.

Brachypteryx poliogenys, Boie, from Sumatra. A *Trichostoma,* short-tailed, with grey ear-coverts and cheeks, white throat, and blackish moustachial mark.

Napothera atricapilla, Müller, = *Trichostoma rostratum,* nobis. Male with blackish cap; female with brown cap.

N. rubricauda, Müller, = *Trichostoma ferruginosum,* nobis, *Brachypteryx bicolor,* Lesson.

N. mystacalis, Müller. Like the two preceding species, with similar long rufous tail, greyish-brown crown, dusky moustachial streak, and white throat and belly.

Ixus poliopsis, Temm., = *Ixidia cyaniventris,* nobis.

I. virescens, Temm., = *Hypsipetes malaccensis,* nobis (nec *H. virescens,* nobis, from the Nicobar Islands).

Trichophorus striolatus, Müller. Like the last, but smaller, with reddish brown on wings. (These two, with *H. philippensis,* Strickland, should perhaps rather rank with *amaurotis* of China, in *Microscelis,* Sw.; but the distinction is very trifling. They lead to my *Iole.*)

Criniger tristis, nobis, n. s. Size of *C. ruficaudatus,* Eyton, but with smaller bill. Upper parts brown, tinged with ferruginous on wings and tail; cap greyish; lower parts albescent, more or less tinged with brown; three outer tail-feathers white-tipped. From Malacca.

C. rubricaudatus, Eyton, = *cantori,* Moore (*gularis* apud nos, *passim*), *sulphurea* (so marked), from Pinang.

C. sericea, Müller, = *Setornis criniger* apud nos, Catal.

C. gularis, Horsf. From Java and Philippines.

Phyllornis icterocephalus, Temm., is *P. cochinchinensis* apud nos, a species inhabiting all British Burma, with the Malayan peninsula, and probably passing eastward to Cochin China. *P. cochinchinensis* apud Temminck is the Javanese race, like the other, but having no yellow on the head, and more of this colour on the breast.

P. venusta, Temm., is a charming species from Sumatra. Above green, below more yellowish green; blue on shoulder of wing; forehead and cheeks verditer; lores and under the eye, with moustaches, purple; throat black, with orange-yellow below; tail black. Wing 2¾ in.

Salpornis spilonotus, G. R. Gray; *Certhia spilonotus,* Franklin. I shall conclude with a more elaborate description than has hitherto been published of this remarkable species, from the hills of Behar, which neither Dr. Jerdon nor myself ever succeeded in procuring.

Bill of *Certhia,* but less curved; foot and hind claw of *Sitta,* but more slender; also tail of *Sitta,* even; wings much as in *Sitta,* but the first primary shorter, and the second longer, reaching nearly to end of tail; first primary short (½ in.), the second nearly as long as the third, fourth, and fifth, which are even and longest. Plumage of upper parts light brown, each coronal feather having a longish white spot, each dorsal feather with a broad black bar and terminal white spot; secondaries and tertiaries barred on the outer web with black, and tipped with white and greyish; the primaries much less distinctly barred; tail beautifully marked with alternate large spots of black and white; lower parts throughout spotted with black, except the throat, which is white; bill and feet brown. Length 5½ in.; of wing 3⅜ in., and tail 2⅛ in.; bill to gape 1 in.; hind toe and claw ⅞ in.

Addendum on Indian Motacillidæ.

There are as many as five well-marked species of Pied Wagtail in India, and three species of *Budytes.*

Motacilla maderaspatana, Brisson (*picata,* Franklin ; *variegata,* Sykes). This, so far as I have seen, is peculiar to India proper, with Ceylon, its range not extending to Lower Bengal (although Calcutta is assigned as a habitat in the 'Revue Zoologique') nor to the countries eastward; and though Dr. Jerdon mentions his having "found it in Sikhim," where I much suspect that he mistook for it the *M. hodgsoni.* I have only seen it alive in captivity. As a cage bird, it is particularly bold and defiant, snapping fiercely at a finger held to it, and frequently uttering a pleasing and sustained song, which is far superior in quality to that of any other Wagtail known to me.

M. luzoniensis, Scopoli (*alboides,* Hodgson ; *leucopsis,* Gould). The only species found in Bengal and in the Burmese countries, so far as I have seen.

M. hodgsoni, G. R. Gray. Nearly similar to the last, but the white throat much contracted, and a well-defined black moustachial line. I did not properly distinguish this when in India, nor has Dr. Jerdon done so, though there are one or more specimens in the Calcutta Museum received from Darjeeling. Mr. Gould first called my attention to its distinctness, having seen only the one specimen in his possession ; but I found two skins in the British Museum, labelled with the name here adopted. All are from the S.E. Himalaya (Nepal and Sikhim).

M. personata, Gould (*M. duchunensis,* apud Jerdon, 'Birds of India,' but corrected in the Appendix). This, I suspect, belongs principally to Upper and Western India.

M. duchunensis, Sykes. Like the European *M. alba,* but somewhat larger, and with considerably more white on the wings. This remains to be identified elsewhere than in Southern India and Ceylon.

Budytes calcarata (et *citreoloides*), Hodgson (*B. citreola* of India, auctorum). This fine species has the habitat of a *Motacilla* or Water-Wagtail, and is remarkable also for its black back in summer plumage, in this exhibiting a further resemblance to certain true *Motacillæ.*

B. melanocephala, Licht. (also of Sykes ; and *B. beema,* Sykes, winter dress). West and South India, Afghanistan, &c.; but not Lower Bengal.

B. viridis, Scopoli (*cinereocapilla*, Savi). The common Bengalese species, more or less diffused over other parts of India. I find this absolutely identical in species or race with numerous examples collected in Egypt, the colour of the cap becoming of a deep dark plumbeous, with blackish ear-coverts, and the chin with submoustachial line bordering the ear-coverts, white. In winter dress, younger specimens have a pale superciliary line more or less developed; and I do not know how such are to be distinguished from the European *B. flava*.

III.—*Notes on the Birds observed at Pisa and in its Neighbourhood during the Winter, Spring, and Summer of* 1864. By Henry Giglioli, Sc.D., C.M.Z.S.

After the labours of that veteran ornithologist, Professor Savi, in this part of Italy, it would have been presumptuous to think of finding anything new here, and especially for me, whose time has been taken up by studies which require a much more sedentary life than those of practical ornithology. However, having observed and studied the habits of a pretty good number of Tuscan birds, I hope that a few extracts from my notes will not prove uninteresting to the readers of the 'Ibis.'

I arrived at Pisa towards the end of December, and from that time have constantly employed my leisure hours in the study of my favourite science. What surprised me much, during my peregrinations, was to find such a paucity of Raptorial birds. "Pharaoh's Hen" (*Neophron percnopterus*), though said to be pretty common on the Monte Argentaro and in the Siennese Maremma, does not occur nearer Pisa; and I never succeeded in seeing one, though I kept up a sharp look-out. "Jean le Blanc" (*Circaetus gallicus*) is pretty common, and I have met with it during the winter in the pine-forests which border the sea-coast from the Gombo to Leghorn. The Buzzard is also common in the same places; it belongs to the dark variety, named *Falco* (*Buteo*) *pojana* by Savi. The Kite, said to be abundant, I have never seen; while towards the end of April I have met several flocks of the Red-legged Falcon (*Erythropus vespertinus*), among which I noticed several small Kestrels, most likely the *Tinnunculus cenchris.* The former small Falcon feeds entirely on insects, especially Orthoptera, and is so Cuckoo-like in some of its habits that it is considered a sort of Cuckoo by most Italian peasants. In the winter I saw, several times, Ospreys (*Pandion haliaëtus*) flying at a great height over the Arno. *Circus æruginosus* and *Otus brachyotus* are pretty common among the marshy flats around this place; and I have occasionally seen *Strigiceps cyaneus,* which is, however, much rarer. Often while returning home of an evening from the town during May, my eyes delighted with the innumerable Fire-flies (*Lampyris italica*) which continually crossed my path, and my ears with the lovely notes of the Nightingale, these have been interrupted by the melancholy hoot of the small Scops Owl (*Scops zorca*) and the curious cry of the "Civetta" (*Athene noctua*), watching for their prey on the tops of the high poplars which line the Piaggie road. The funereal *Strix flammea* often utters its dismal screech from the roof of the Campo Santo, or from the top of the celebrated Leaning Tower, where it finds a plentiful prey among the numerous *Molossi* and other Bats which inhabit those two structures.

The Nightjar (*Caprimulgus europæus*) is not very abundant; but its churring note is often heard in the dusky twilight of spring and summer evenings. *Hirundo rustica* and *Chelidon urbica* are the only Swallows seen about here: the latter made its appearance before the former, towards the end of March. I have not met with the *Hirundo rufula* of Temminck, of which I procured several specimens when at Genoa some years ago: it passes that place in small numbers pretty regularly; for every year one or two are captured among the hundreds of Chimney Swallows which are shot for the Genoese market during the spring migration. I suppose that a few pass this neighbourhood also, but have escaped detection, as Swallows are never shot here, being considered chickens of the Madonna. Where is the *true habitat* of this species, which is certainly quite distinct from the *H. alpestris* (Pallas) of Eastern Asia? In August I saw several Rock-Martins (*Cotyle rupestris*) about the Bagni di Lucca. *Cypselus apus* abounds in the old edifices of the town; and now and then I have seen a truant individual of the great White-bellied Swift (*Cypselus melbus*), which nestles in great numbers along the Etruscan coast. During the first days of May, large flocks of the common Bee-eater (*Merops apiaster*) passed over this place, flying northwards. They continually betray their presence by their loud rolling whistle; but rarely stop near here, unless in the olive-plantations at the foot of the Monte Pisano. They appear, however, to breed not far from this place, as in August I have met with the young birds in the Tombolo Forest. *Merops ægyptius*, a few stragglers of which have been caught at Genoa, has never been seen here. *Upupa epops* is pretty common; but its shy and retiring habits, no less than its noiselessness, make it appear rarer than it really is. It arrives in April, and may often be seen feeding on worms and grubs in the damp fields along the Arno. About here I have observed the active little *Certhia familiaris* very common; and once or twice I have had the opportunity of seeing the rarer and lovely *Tichodroma muraria* displaying its bright rose-coloured wings on the rocks of the Monte Pisano, near the Baths of San Giuliano.

The small and sprightly *Lusciniidæ* are very abundant in this part of Italy. In the beginning of spring, when the reeds and other marsh-plants are not yet grown, the tiny *Cisticola schœnicola* is constantly seen flying upwards over corn-fields, uttering its cheerful song, and then diving down again amongst the green wheat. *Pseudoluscinia luscinioides* (Savi) is pretty common; but it keeps to the thick willow-bushes which border the river, and into them one must penetrate to observe it: it creeps about the twigs and leaves just like the *Phylloscopi*. *Calamodyta arundinacea* and *Acrocephalus turdoides* are abundant among the reeds which border the Arno towards its mouth, and the loud and laugh-like notes of the latter are constantly heard in such situations; while the rarer *Calamodyta cettii* and the *Calamodus melanopogon* are to be seen, in the spring, among the tall reeds (*Arundo donax*). I have found *Thamnodus melanocephalus* in early spring, but it is rare; it differs totally in song and habits from the common Blackcap (*Monachus atricapilla*), which stops with us all the winter. *Epilais hortensis* begins to be abundant in the beginning of autumn; it frequents fig-trees, and is the true "Beccafico" of the Italians. *Adophoneus curruca* and *A. orphea* arrive in April; and certainly the harsh and discordant song of the latter does not justify its specific denomination : the males of both have the habit of perching on the topmost branch of a tree, and from thence they fly up in the air, uttering their short, powerful song, while the females enjoy the concert lurking in the grass beneath. *Hypolais polyglotta,* out of which several species have been made, is not very common, and is much more solitary in its habits than the Willow Wrens, which are all common,—*Phyllopneuste rufa* remaining here all the winter, while *P. trochilus, P. sibilatrix,* and *P. bonellii* succeed each other in the spring : the last is the scarcest, and has much the same note and habits as the Grove Pettychaps. The *Reguli, R. cristatus* and *R. ignicapillus,* are both common during the winter, especially among the pines of the Cascine. The Wheatear (*Saxicola œnanthe*) abounds in early autumn, being much esteemed as an article of food; and the *Pratincola rubicola* may constantly be seen on the top of bean-sticks and in other prominent positions. I never met with the *Saxicola stapazina* or the *S. aurita,* both so common in the neighbourhood of Genoa. The Redstart (*Ruticilla phœnicura*) is common in spring, and still more so towards the end of summer; while *Cyanecula leucocyanea* (with the white pectoral spot) is scarcer, and frequents the borders of marshes : it has a curious way of spreading out its fan-shaped tail. The Nightingale (*Philomela luscinia*) arrives early in April, and soon makes all the neighbourhood resound with its melody. Dunnocks are not common here; but several times during the last winter (which was most severe) I saw the *Accentor alpinus,* while I only once stumbled across *A. modularis,* so common in England.

Amongst the *Parinæ, Parus major, P. ater, Cyanistes cyaneus, Pœcile palustris,* and *Orites caudatus* are all common, while the elegant *Panurus biarmicus* is pretty numerous in the Maremma. But what surprised me most was the extreme abundance of that lovely little bird, the Penduline Titmouse (*Paroides pendulinus*). About the 2nd of March it first made its appearance, in pairs, frequenting the tops of the poplars (*Populus alba*) which line the Piaggie road. I became aware of its presence by the shrill whistle, resembling the note made by an Orthopterous insect, which the males continually uttered. Towards the end of the month, the poplar-down being abundant, they began to weave their beautiful nests; and by the first week in April some were already finished, and gracefully swinging from the extremities of the uppermost poplar-twigs.

As I had such excellent opportunities for observing the nest-making process of these interesting birds, I shall here give the history of a nest of which I witnessed the beginning and, I am sorry to say, the end; for I had it taken down as soon as the eggs were laid. Passing, one morning early in April, under a poplar, I observed a pair of Pendulines apparently very busy: I stopped to look, and soon found that they had just fixed on a convenient twig, and were laying the foundations of their aërial abode, which, as in all suspended fabrics, were uppermost. Both male and female were hard at work, the materials used being fine long grass. They were two days in forming what I may call the skeleton of the nest: it was bell-shaped, the twig forming a kind of axis. Early on the morning of the third day, as I paid my usual visit to the little builders, I found the male busy with a ball of poplar-down nearly as big as himself; this he secured between the twig and the incipient fabric, and, taking a small tuft in his bill, he set-to weaving it into the top of the framework. The female presently arrived, also carrying a great ball of down, and she went to work in the same way. This process continued that day; and towards the close of the following one the bell-like framework was covered with a thick coating of down. Now came the most difficult and interesting part of the undertaking, namely, the weaving-in of the bottom of the nest. Both birds worked as usual, though the male seemed to act as chief architect, looking over the work of his mate, and giving it an occasional touch-up. It usually took them about five minutes to collect the load of down; this they always deposited near, taking little bits from it for use as required. The weaving was all done with the bill, as the bird was suspended head downwards, holding on to the finished part of the nest by its powerful claws. On the eighth day the nest had assumed its kidney-like form, with a great ragged opening on one side. The little couple now set about making the entrance of their house, and seemed to consider it a very important undertaking; for they were two whole days at it: both worked standing in the nest, and only their pretty little heads were visible. The portico came out very grandly—a tube 2½ inches long, tolerably thick, and strongly woven. A couple more days were spent in thickening and strengthening the sides and bottom of the nest; and on the thirteenth day, seeing that they had left off working, and that the female kept very much in the nest, I guessed that she was laying; and though it grieved me much to take from the industrious little pair the product of their labour, I sent up a boy to get the nest; for the naturalist must sometimes play the thief, and even worse, to prosecute his studies. The nest contained one very small white egg. I measured the nest, and found it 8½ inches in length, 4 in breadth, and 17 along the greater circumference; in the bottom the down was 3 inches thick. The adult bird is hardly 3½ inches in length, from the tip of the bill to the root of the tail.

In the middle of April nests were brought to me with their full number of eggs, which varied from four to six; towards the end of the month very young birds were brought to me; and about the middle of May I began to see some youngsters, insect-hunting about the poplars, with their parents; after the middle of July they disappeared, going, I suppose, towards the Maremma, and now and then only have I seen a straggler on the white poplars. In the Maremma Marshes many Pendulines build, constructing a less beautiful nest with aquatic plants and grasses.

During the winter, *Motacilla alba* is abundant along the roads, while *Pallenura boarula* keeps to the small torrents of the Monte Pisano. *Budytes flava*, *B. cinereocapilla*, and *B. melanocephala* (which two last I consider mere permanent varieties or races of the first-named, and I think can as yet only be described as incipient species) arrive in small flocks in April, and may always be seen in the marshy meadows frequented by cattle and horses along the river. *Spipola pratensis* abounds in the same localities during winter, while the Tree Pipit (*Pipastes arboreus*) appears in spring frequenting corn-fields and meadows.

The Dipper (*Cinclus aquaticus*) is never found in the Pisan plain; but it is pretty common in the Lucchese Apennines, and I have seen it hopping about, tail erect, among the rocks which form the bed of the torrent Lima, at the Bagni di Lucca. Of the *Turdi* I have observed all the common European species, except the Fieldfare (*T. pilaris*); and I have several times met with the Ring-Ouzel (*Merula torquata*). In April the two Rock-Thrushes make their appearance: the *Petrocincla saxatilis* may then be seen perched on the detached masses of limestone which adorn the flanks of the Monte Pisano; while the "Passera solitaria" of the Italians (*P. cyanea*) generally frequents old towers and church steeples, and pours forth its glowing melody even from the top of the Verruca, a ruined mediæval fortress which crowns one of the highest summits of the Pisan range. The Golden Oriole (*Oriolus galbula*) reaches these shores towards the end of April, and the poplar-trees which fringe the Arno resound soon after with its powerful and monotonous note. It is indeed a glorious sight to see one of these beautiful birds flying, the golden yellow of its body contrasting beautifully with the intense black of its wings and tail. As Mr. Swinhoe has observed in *O. chinensis*, in the European species also, the adult female acquires a plumage similar to that of the male; and I suppose the same is the case with all true Orioles.

Flycatchers were pretty abundant in April, and on the same day I shot the three common European species, *Butalis grisola*, *Muscicapa albicollis*, and *M. luctuosa*. This last species is new to the Tuscan avifauna; and when I showed the numerous specimens I had procured to Professor Savi, he was much surprised, and said that, during the forty years he has been studying the ornis of this part of Italy, he had never come across the Pied Flycatcher, which, however, abounds during the spring passage at Genoa and all along the Riviera. *Erythrosterna parva* has been caught not far from here, but it is very rare.

I have only met with two species of Shrikes, the common *Enneoctonus collurio* and the scarcer *Lanius minor*, though the Wood-Shrike (*Phoneus rufus*) is said to be abundant in this neighbourhood.

Few species of the Crow-tribe appear in the vicinity of Pisa. *Garrulus glandarius* is very common, and even utters its loud screams along the much-frequented Piaggie road. The Magpie

(*Pica caudata*) may also be seen pretty often, especially perched on the humps of the camels used for conveying wood in the King of Italy's park at the Cascine. Among the same Camels, in the meadows which border the Cascine, large flights of Rooks (*Corvus frugilegus*) are to be seen during the winter and early spring, making great havoc among the *Lumbrici* and other Invertebrates: with them are generally a few specimens of the Hooded Crow (*C. cornix*); but the Rooks disappear in spring, none breeding here, while the Carrion Crows remain. According to Savi, the roof of the Battistero sheltered a numerous colony of Jackdaws in times gone by; but now, not a single individual of the *Lycus monedula* is to be seen about here.

Pastor roseus occurs irregularly; and I had the good fortune to see a couple flying in the midst of a flock of Starlings (*Sturnus vulgaris*) in June. When caught, they are constantly found among Common Starlings.

Finches are pretty numerous here; and towards the end of March small flocks of the Hawfinch (*Coccothraustes vulgaris*) appear. *Chlorospiza chloris* follows, frequenting the tops of the white poplars which line the Piaggie and Cascine roads, as do also small flocks of Siskins (*Chrysomitris spinus*), Goldfinches (*Carduelis elegans*), and the lovely little "Serino" (*Dryospiza serinus*) later in the spring. *Petronia stulta* is not common: I have occasionally seen it during last winter, which, being very severe, caused the Brambling (*Fringilla montifringilla*) to be extremely abundant; and even a few specimens of the *Montifringilla nivalis* made their way from the snows of the higher Apennines to the warmer Pisan plain. It is remarkable that I have seen no Linnets during my stay here. *Passer italiæ* and *P. montana* abound; and the two breed in company on our roof, on which I found no less than forty-eight nests, thirty belonging to the Tree-Sparrow. Their constant sociability confirms the views of some French ornithologists, who think Sparrows closely allied to the *Plocei*.

Among the Buntings, Pisa and its neighbourhood possess some fine species. During the winter I have observed the following:—*Emberiza citrinella*, *E. cirlus*, and *E. cia*. Towards the beginning of spring, the curious note of the Corn-Bunting (*Spinus miliaria*) is heard in every field; and later in the spring, the marshes teem with *Cynchramus schœniclus*, while that most interesting and anomalous Bunting, the *C. palustris*, is by no means uncommon in the same situations: its bill resembles mostly in shape that of the *Pyrrhulæ*, which character isolates it from all other *Emberizæ*; while in size and colour it is curiously like the common Reed-Bunting, with which it was long confounded. It certainly deserves to be considered as the type of a subgenus, if not of a genus; and as no one seems to have anticipated me, I propose the generic name of *Pyrrhulorhyncha*,—being at the same time ready to withdraw it, if any one has had the priority over me: thus it will stand as *Pyrrhulorhyncha palustris*. *Buscarla lesbia* (with which may rank as synonym the *E. durazzii* of Bonaparte) is said never to occur here; but I saw several in February, feeding in a field among other Buntings. The Ortolan (*Glycyspiza hortulana*) appears in great numbers in the spring, enlivening the country around with its pleasing song.

Among the Larks, *Alauda arvensis*, *Galerida cristata*, and *Lullula arborea* abound during winter; while in spring large flocks of the *Calandrella brachydactyla* appear, especially along the seashore near the Gombo. *Melanocorypha calandra* is a constant resident, but not very common in the immediate neighbourhood of Pisa; and during January two specimens of the Shore-Lark (*Otocorys alpestris*) found their way to the Pisan market. The two varieties of the Bullfinch (*Pyrrhula vulgaris*) are abundant, but only during the winter.

The species of Woodpeckers I have observed are few. I found *Dryobates major* and *D. minor* pretty common; while the pine-forest called the Tombolo, which extends from here to Leghorn, resounds with the loud cry of the Green Woodpecker (*Gecinus viridis*). *Yunx torquilla* abounds, and remains here even during the winter, for I procured specimens in January and February. *Cuculus canorus* is rather scarce; it arrives at the end of April: I saw the first one, this year, on the 29th of that month. According to Savi, *Coccystes glandarius* has actually bred in the woods around Pisa; but I think its occurrence here quite accidental.

The only *Columbæ* I have seen about these parts are the Ring-

Dove (*Columba palumba*) and the *Turtur auritus,* which last arrives in May and is very abundant.

Among the *Gallinæ,* three species of Partridge occur—*Perdix cinerea, Caccabis rufa,* and *C. græca,* the last-mentioned being the scarcest. In April the whole neighbourhood resounds with the note of the Quail (*Coturnix dactylisonans*). The little Bustard (*Otis tetrax*) is said not to be rare, and nearly every year some are captured in the immediate vicinity of this place; however, I have not met with it during my stay here.

The Stone-Curlew (*Œdicnemus crepitans*) is common; it appears to be a resident species. The "Sea-Partridge" of the Italians (*Glareola torquata*) arrives in May, and is generally brought living to the market, being caught by fowlers who are out after Sea-Swallows. The Lapwing (*Vanellus cristatus*) abounds in large flocks during the winter, and frequents the large damp meadows which border the Cascine road; and being in the King's preserves of San Rossore, nobody can touch them: they leave in April, and it is rare to see one here that has acquired the black throat. The Golden Plover (*Charadrius pluvialis*) is extremely common, but only during the winter; and the two Ring-Plovers, *Ægialites hiaticula* and *Æ. minor,* arrive in spring in full nuptial plumage, the last one only breeding here, along the Arno. Both the Turnstone (*Strepsilas interpres*) and the Oyster-catcher (*Hæmatopus ostralegus*) are rather scarce in these parts, and I have only seen one of the latter flying over the Arno in April.

Cranes (*Grus cinerea*) repass here in March, and it is a fine sight to see them flying high up in the air, forming a compact phalanx of the shape of an inverted λ; they generally betray their presence by loud and discordant screams. With Savi, I believe it not unlikely that a few may pass the winter in the Tuscan Maremma and Pontine Marshes.

I found the Grey Heron (*Ardea cinerea*) scarce, while during the spring passage (towards the end of April) I frequently saw large flights of the Purple Heron (*Ardea purpurea*) slowly flapping overhead; they are then in full nuptial plumage, and are the commonest among the true Herons in this neighbourhood; they breed in the adjacent marshes, and in the beginning of autumn, during the passage southwards, the young form by far the majority. *Herodias egretta* is very rare, and I have not seen it; but the smaller *Herodias garzetta* is much more abundant, and on the 15th of last April I saw a flock of ten lazily flapping over the Arno in front of our house, their snow-white plumage making a fine contrast with the dark foliage which borders the river. On the 30th of April, during a rowing-trip with a friend down the Arno, I observed two white birds wading about a sand-bank near the river's mouth, which, when we got nearer, proved to be the rare *Buphus russatus*, or Buff-backed Heron, so common in Egypt—a species which is certainly quite distinct from the *Buphus coromandelicus* of South-eastern Asia, though many naturalists persist in confounding the two together. The beautiful Squacco Heron (*Ardeola ralloides*) abounds in May, and I have seen flocks of it on the fenny flats between this place and Leghorn; it prefers the places where cattle are grazing. The diminutive *Ardetta minuta* is also common, but is rarely seen, as it skulks about the reeds and long grass. The Night-Herons (*Nycticorax griseus*) arrive in May; they are mostly adult individuals; and after dusk their melancholy "*qua-a*" may often be heard along the Arno, while their white ghost-like *silhouettes* may be seen through the increasing gloom stalking about on the sand-banks in the river. The long white feathers which form the occipital crest in this species vary much in number: I got a specimen with as many as six; three is, I believe, the ordinary number. The Bittern (*Botaurus stellaris*) remains occasionally all the year round in the Pisan Marshes; I found it common in early spring.

The Black Stork (*Ciconia nigra*) is said to breed in the neighbouring fens; but I have come across neither it nor the white species, *Ciconia alba*. The Glossy Ibis (*Ibis falcinellus*) passes here pretty regularly in the latter half of April, stopping about a month: I saw three flying over the marshes of San Rossore in May.

We have three species of Curlew here—the *Numenius arquata*, the *N. phæopus*, and the *N. tenuirostris*: this last is the rarest and most interesting. I had the pleasure of seeing several, in April, on an islet at the Bocca d'Arno. Their presence in Tuscany appears to be accidental; for at times they appear in great numbers, becoming afterwards extremely scarce.

I have met with only one species of Godwit, the *Limosa melanura,* which abounds in March and April. *Totani* are pretty numerous during the spring passage. *Totanus glottis* is said to stop the winter in this neighbourhood: I have seen it in February; while I got a specimen of the Common Redshank (*Gambetta calidris*) in March. In May a splendid specimen of the Spotted Redshank (*Erythroscelus fuscus*) was brought to me alive; it had been netted with a lot of *Sternæ,* and was in full summer dress. *Helodromas ochropus* and *Rhyacophilus glareola* are common; while *Tringoides hypoleucos* abounds. *Totanus stagnatilis* is much scarcer, and I only procured two specimens in April.

The Stilt (*Himantopus candidus,* called here "Cavalier d'Italia") passes every year pretty regularly in May. I had the good fortune of seeing a flock of five of these curious birds, wading about in a shallow pool at Bocca d'Arno: they took to the wing on my approach, flying very swiftly, and uttering a clear bell-like sound. The Avocet (*Recurvirostra avocetta*) is rather rarer; but every year, during the spring, one or two are captured.

The Ruff (*Philomachus pugnax*) is exceedingly common during March and April, but it never occurs in its summer dress; now and then, however, I have come across individuals with the change coming on: the males invariably arrive before the females. Sandpipers and true Tringas are not very common, and I have found only a few species. *Pelidna subarquata,* in full nuptial dress, is brought alive in large numbers to the market: it is caught with nets, and thrives very well in captivity. I kept nine or ten for about three months in a small enclosed space in the garden, where they had a little pool of water; I fed them on bread and chopped meat, which they ate readily, and they were brisk and active all the while I kept them, the males constantly fighting together, just as the Ruffs do.

With the Curlew-Sandpiper I got *Limonites temmincki* and *Actodromas minuta;* while, in May 1863, Professor Savi procured in a similar manner nine specimens of the rare *Limicola pygmæa,* all in full summer plumage.

I have met with the following species of *Scolopacidæ*:—*S.*

rusticola, Gallinago scolopacina, and *G. gallinula,* during the winter. Brehm's Snipe (*G. burka* or *G. brehmi*) is not rare; I found it in February; and *Gallinago major* arrives towards the end of April in great numbers.

The quick and sprightly Water-Rail (*Rallus aquaticus*) is peculiarly common here, while at Genoa I found it very scarce. *Ortygometra porzana* is also exceedingly abundant, appearing in April; and *O. pusilla* is pretty common about the same time. Baillon's Crake (*O. bailloni*) is decidedly rarer, arriving also later in the spring. The Moor-hen (*Gallinula chloropus*) arrives here in April, and is then very common; while the Coot (*Fulica atra*) abounds on every marsh in the Pisan neighbourhood, especially on the small Lake of Massacinccoli, near Viareggio, and is eagerly sought for as an article of food. I suspect that the Crested Coot (*F. cristata*), so common in the island of Sardinia, often strays to these shores and is confounded with the common species.

The Flamingo (*Phœnicopterus antiquorum*) has been shot here latterly, but its appearance in these parts is a rare event.

The only Wild Goose I have met with during my ornithological rambles was *Anser segetum,* in large flocks on the San Rossore preserves during the winter. Of *Anatidæ* I have found the following species in winter and early spring:—*Anas boschas, Mareca penelope, Dafila acuta, Chaulelasmus strepera, Querquedula circia, Nettion crecca, Spatula clypeata, Æthyia ferina, Nyroca leucophthalmus, Fuligula cristata,* and *Clangula glaucion* (young birds). *Callichen rufina* is also here pretty often; but I have not met with it. Of the *Merginæ,* I only procured the Smew (*Mergellus albellus*).

The Pisan neighbourhood would seem peculiarly well adapted for Grebes, and my expectations in that quarter were very high, as I hoped to get all the European species; however, I was doomed to be disappointed, and got only three species, *Podiceps cristatus, Proctopus auritus,* and the common Dabchick (*Sylbeocyclus minor*).

My list of Sea-Gulls and such like will be short; for, owing to my numerous occupations, my visits to the coast were necessarily few and far apart; however, I contrived to see the following. The Manx Shearwater (*Puffinus anglorum*) I saw resting on the water near the Gombo, towards the middle of May. These birds never came up the Arno, nor have I ever heard of their having been seen on fresh water; they appear eminently marine.

About Leghorn harbour and the neighbouring shore along the Ardenza I saw, towards the end of May, *Laroides argentatus*, *L. fuscus*, *L. canus*, and *Chrœcocephalus ridibundus*, all very common; while I saw only a few scattered individuals of the beautiful *Chrœcocephalus melanocephalus* and of the Little Gull (*Hydrocolœus minutus*).

As to the *Sterninæ*, I never was in a place where so many are seen. Towards the middle of May, when the passage begins in the Maremma and in the fenny country around Pisa, hundreds and thousands are caught with nets; indeed, so great is the number, that they are sent in bags to the Pisan market, to supply the wants of the poorer classes, who do not object to toughness and a strong fishy taste; and such is their abundance, and so little their worth, that their wings are cut off before they enter the gates of the town, as they pay duty in proportion to their weight. These mutilated and dead birds may be seen in heaps in the market; but, what is worse, whole cagefuls are brought alive, and sold at the rate of a penny each, for the amusement of street-boys and such like, who torture the poor creatures dreadfully, until hunger puts an end to their lives; for they will not eat in captivity. The commoner species thus caught are *Hydrochelidon nigra*, *H. leucoptera*, and *Sternula minuta*. *Sterna hirundo* is scarcer; and on the 20th of last May, among a lot of Little Terns, I found a fine male specimen of the *Hydrochelidon leucopareia*. Professor Savi told me that he had got several of them during the spring of 1863.

Here finishes the list of the birds which came within my observation during my nine months' stay here. Before concluding, I will add that, from what I have seen, the country around Pisa, especially towards the Maremma, is most favourable to marsh-loving birds, and more especially to some sections of the *Sylviinæ*; and I doubt not that, as shooting has been recently permitted to ornithologists during the spring and summer, new species may turn up in the Tuscan avifauna.

Pisa, October 21st, 1864.

IV.—*Note on the two Flamingoes of South Africa.*

By C. J. Andersson.

1. Phœnicopterus erythræus, Verreaux.

This Flamingo is very abundant at Walvisch Bay, Sandwich Harbour, Angra Pequena, the mouth of the Orange River, and probably in many other places on the south-west coast of South Africa—at least to the north of Walvisch Bay; it is also met with in a few inland localities, such as Lake Ngami, Lake Onandova, &c. With rare exceptions (and these not well authenticated, but merely surmised from birds being sometimes found barely able to fly), the Flamingoes do not breed in any of the coast-localities above named, nor do I know where they go to nest. All that I myself have observed, or otherwise can learn, is, that on the approach of the breeding-season they all wing their way to the northward; and it is very probable that they breed on some of the less accessible and less disturbed lagoons and shallows rumoured to exist between Walvisch Bay and Great Fish Bay. The old birds always return first.

The Flamingoes are invariably well-conditioned, and frequently enormously fat; their chief food consists of small Crustacea, sea-animalcula, sea-grass, &c. They are good eating, more especially the young birds; but, having a rather strong fishy flavour, they require to be well cooked and spiced; they ought also to be cleansed of all fatty matter, and perhaps eat best when served up in pies or curries.

In the newly fledged bird the bill and legs are of a very dark purple, so much so as to give these parts, at a little distance, the appearance of being quite black.

The head, neck, throat, and breast are greyish, with the shafts of the feathers dusky, the back of the neck being darkest in hue, and gradually deepening in shade as it approaches the back. The wing-coverts, scapulars, and upper parts of the back are yellowish grey; spurious wings pinkish, the feathers for about half an inch from the ends being a dirty light yellowish brown; primaries and secondaries dark brown; tertials white at the base, gradually shading off into yellowish grey. Upper parts of the belly dusky white, or nearly so; the under wing-coverts pale pink or dirty white; back and upper tail-coverts whitish, faintly washed with pink, and with a dusky blotch or stripe along the shaft of each feather. Tail faint roseate white, with the outer veins of the feathers broadly edged with greyish brown, the very outermost edge being sometimes flushed with a pale pink. Throughout almost the entire plumage, the shafts of the feathers are more or less dusky, occasionally running into blotches and patches of a dirty whitish brown.

As the bird approaches its adult stage, the bill becomes more elongated, and only the extremities of the mandibles remain black, the central and basal portions of the bill becoming bluish; the grey colour of the plumage nearly disappears, except about the wings, and in its place white predominates, the head, neck, and throat only remaining a little dusky; the pinkish scarlet under the wings brightens, and large irregular markings of a similar colour appear on the outside of the wings also.

In the adult bird the whole of the bill is pink, except the tips of the mandibles, which remain black. The wings, under wing-coverts, and tertials are scarlet (the spurious wings and tertials being palest); the secondary quills are glossy black; the primaries are so on the outer edges only, the other parts of those feathers being of a sooty brown; the primaries have also on the inside a longitudinal dark-brown stripe on either side of the shaft. The head, neck, shoulders, scapulars, breast, belly, and under tail-coverts white, very faintly flushed with scarlet; the back, upper tail-coverts, and upper surface of tail white, beautifully and harmoniously tinted with scarlet-pink. Legs and toes scarlet-pink; nails brownish black, shading off into light horn-colour on the edges.

2. Phœnicopterus minor, Geoff. St. Hilaire.
Phœnicopterus parvus, Vieillot.

This Flamingo is of rare occurrence here; at least, I have met with it very sparingly.

In the adult bird the form of the bill is precisely that of the newly fledged young of the preceding species; its colour is as follows:—the basal part is of a dull brownish purple, the parts adjoining being vermilion, which deepens into crimson-red bordered by black, which is shaded off into a light horn-colour towards the extremities of the mandibles. The general ground-colour of the whole plumage is white, overlaid, as it were, with a delicate transparent tint of the purest scarlet, passing into rose-colour or delicate crimson on the lower parts. This deeper hue is arranged in semi-oval patches, generally occupying the exposed part of the feathers, and being most decided towards their extremities, leaving a border of about a line in breadth of a paler tint, which sometimes approaches to white. The plumage has, in consequence of this arrangement of colour, the appearance of being plated or mailed. The under wing-coverts are pinkish red; and the long inside feathers at the third joint of the wing are deep red, paling off at the outer edges to a scarlet-white. The inside of the primary and secondary quills is of a faint reddish brown; the legs and toes are crimson-scarlet; the nails brownish black, shading into light horn-colour at the edges.

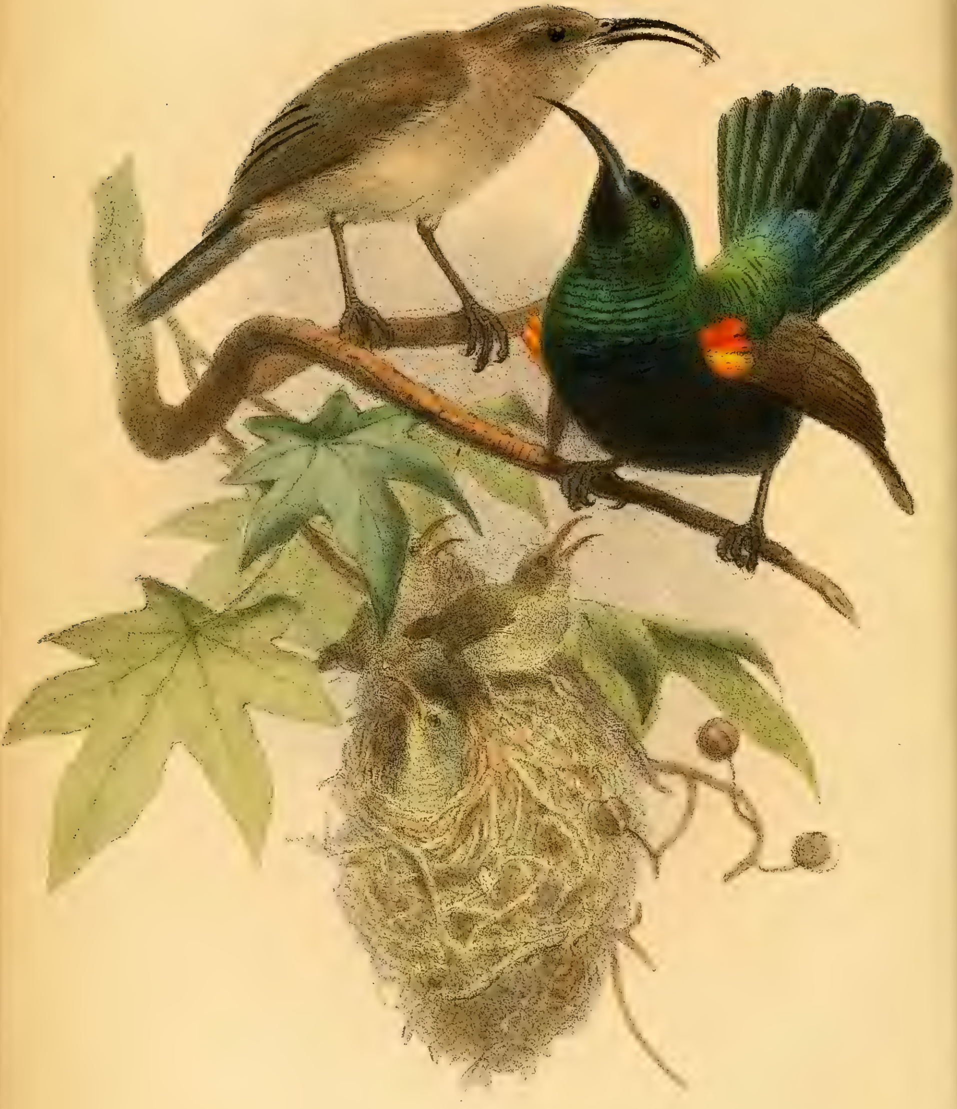
At a little distance, and with the light full upon it, this bird has a most beautiful appearance; indeed it is a perfect gem amongst the feathered tribes.

The following Table will show the comparative dimensions of the two species, though I think that *P. erythræus* varies in size a good deal.

	P. erythræus.			*P. minor.*		
	feet.	in.	lines.	feet.	in.	lines.
Entire length	3	10	6	2	6	–
Wings when folded	1	4	–	1	–	6
Tarsus	1	–	3	–	7	2
Middle toe	–	4	–	–	3	–
Tibia	–	8	–	–	4	3
Tail, measured from the small oil-gland on the rump	–	6	6	–	5	6
Bill, measured along the curve of the upper mandible	–	5	9	–	4	2

[Mr. Andersson's notes were accompanied by drawings, by Mr. Baines, from which it would appear that, in the adults of both species, and likewise in the immature stages of *P. erythræus,* the bare skin between the bill and the eye is of the same colour with the base of the bill; also that the irides in both species are orange.—J. H. G.]

Ibis.1865.Pl.II.



J Wolf. del. et lith.

M&N Hanhart imp.

NECTARINIA OSEA

⁂ We cannot allow this communication to appear without expressing our deep regret (in which, we are sure, all our readers will sympathize) at the heavy misfortune which has lately befallen Mr. Andersson. Some months since, in a hostile engagement between two native tribes, one of which was living under his protection, Mr. Andersson was most severely wounded; and though we are glad to say that, by the last accounts received from him, his life seems to be out of danger, there is too much reason to fear that this intrepid traveller has been crippled for the rest of his days.—Ed.

V.—*On the Ornithology of Palestine.* Part I.

By the Rev. H. B. Tristram, M.A., F.L.S., C.M.Z.S.

(Plate II.)

Most of the regions comprised in the northern hemisphere have now been so far explored that the naturalist can scarcely anticipate the discovery of many novelties in this portion of the world. Yet the Fauna of Palestine, apart from the peculiar interest of associations, sacred and historical, is of exceptional value from the light it casts on the question of the geographical distribution of species. In the first number of the former series of the 'Ibis,' I had the pleasure of drawing attention to the ornithology of the Holy Land; and I rejoice in being permitted, after the lapse of six years, to occupy a few pages in the first number of the new series with an account of some of the results of a recent expedition to the same country. Ever since my first visit to Palestine in 1858, I had been impressed with the importance of a more complete investigation of its fauna than had yet been undertaken; and not the least of the many obligations which I gladly acknowledge as due to the publication of the 'Ibis' is that it was the means of my being induced to organize and take part in an expedition for the physical exploration of the Holy Land. A period of nearly ten months in the past and present year was occupied in this expedition; and the results, though not very novel, are sufficiently interesting to make us feel well rewarded for our exertions, while we obtained fair collections in all the four classes of the vertebrate kingdom.

The geographical position of Palestine, as an outlying province of the Palæarctic region, is clearly illustrated by the general character of its fauna. Northern and European forms predominate on the coasts and in the hill-country, but in the interior we find some startling divergences from this type. Limited in area, a slip of coast territory, 200 miles in its extreme length, and not above 90 in width, it could scarcely be expected to vary much in character from the neighbouring Mediterranean countries. Along the whole coast, on the rich maritime plains, and on the western slopes of the highlands which rise behind these plains, everything partakes of the character of the fauna and flora of the Mediterranean basin, with a slight admixture of Egyptian immigrants. The Gulls and Petrels which skim the shores are the same as those which dash down the Bosphorus, or dip in the harbour of Alexandria; the same Raptors descend from the hills as sweep the inlets of Smyrna, or earn a scanty subsistence among the hungry isles of Greece; the Russian winters dismiss from inhospitable plateaux almost the same species by divergent routes to the west and the east of the Mediterranean; whilst returning spring tempts but few Warblers from the scorching south, whom a spirit of adventure does not induce to ramble still further towards the north.

But, so soon as we have crossed the Mediterranean watershed, we are encountered by types of another origin and widely different affinities, which, to whatever province they may appertain, are certainly not Palæarctic in their relationships. To understand the cause of this, we must recollect that the two great ridges of central Syria, the Libanus and the Antilibanus, do not terminate, as a cursory inspection of our maps might lead us to suppose, at the northern frontier of Palestine. They project themselves far southwards, though at a less elevation, running in two parallel ranges, separated from each other by the deep chasm of the Ghor, or Jordan valley, until the western range, after forming, by its broken and irregular spurs, the hill-country of Galilee, then gathers more compactly into the mountains of Ephraim and Benjamin, is spread out into the hill-country of Jordan, and finally is lost and expanded into the high table-land of western Arabia Petræa, which forms the watershed of the

Wady el Arish, and is abruptly brought to a point at Ras Mohammed, at the bifurcation of the Dead Sea.

Broken more or less throughout its whole course, this continuation of the Lebanon is the platform on which all the great historical cities of Palestine rest, and divides the watershed of the Mediterranean and the Jordan and Dead Sea valley. The eastern range, that of the Antilibanus, after culminating in Jebel es Sheik (the ancient Hermon) at a height of nearly 10,000 feet, runs southwards with much less irregularity, until it terminates at the Gulf of Akabah in the peak of Jebel el Ashab. In its course it is known as the table-land of Bashan, the mountains of Gilead and Ajalon, the hills of Moab, and the fine range of Wady Mousa or Petra. This range, like the western, forms the separation of a watershed through its whole length, the westward face draining into the Jordan, the Dead Sea, and the Arabah, while the eastern watershed fertilizes the Belka and the Hauran, and is lost in sebkhas or salt-lakes and marshes in the Arabian Desert. None of its drainage reaches the Red Sea or the Euphrates.

In this desert we have, as in the Sahara of North Africa, an illustration of the fact that a desert expanse forms a barrier against the distribution of a fauna, more impassable than an area of water of even equal extent. As it is the Sahara, and not the Mediterranean, which separates the faunas of Europe and Africa, so it would seem to be the Desert of Arabia, and not the Persian or Red Sea Gulfs, which marks the line between the Indian, Ethiopian, and Palæarctic circles of distribution, all of which, however, impinge in this region on one another's boundaries and overlap each other.

Yet, were it not for one unique and unparalleled phenomenon in its physical geography, we should find the avifauna of Palestine similar in character to that of the Barbary States—essentially of the Mediterranean basin, but with some few stragglers from eastern Africa, whose arrival had been facilitated by the lay of the Red Sea, and with a still more scanty number of stragglers across the eastern desert from the Euphrates valley. But the phenomenon of the existence of the Ghor, or deep fissure of the Jordan valley, disturbs these proportions. The little district of Palestine is rent by this long chasm, 1400 feet below the level of the sea, enclosing tracts, some arid and salt, others fertile and well watered, but all enjoying in the temperate zone the climate of the tropics, and wholly distinct from the country on either side. The enclosing ranges, as I have said, are prolonged into the Red Sea; but whether the Ghor was formerly a branch of that gulf, and separated from it by the rising of the ridge of Arabah (the height of the watershed of which has this year been ascertained by M. Vignes to be 786 feet), or whether the valley has been slowly depressed to the north of that ridge, is immaterial for us to consider with reference to the peculiarities of its avifauna. In either case, the depression is, geologically speaking, ancient, and has existed for such a series of ages as to have permitted the introduction or development of the forms most suitable to its climatic condition. These forms appear most of them to be local and sedentary, and, though frequently closely affined, are, so far as our present knowledge extends, specifically distinct from their nearest congeners in adjacent regions.

Some of the peculiarities of the natural history of the Ghor had not escaped the observation of the ancients, and in some of their guesses there is an underlying vein of geological truth. Josephus observes that some of the fishes of the Lake of Galilee are peculiar, and that others, as the Cat-fish, κορακῖνος (*Clarias macranthus*, Gthr.), which he especially names, are identical with the fishes of the Nile. Our specimens captured this year prove the correctness of the assertion of Josephus. From this identity of its fish, the old historian tells us that some have thought the fountain and stream Capharnaum, which flows into the lake, to be a vein (φλέβα) of the Nile. Ptolemy, too, mentions a notion that the Jordan was an old affluent of the mighty river of Egypt. We may smile at these conceits, and class them with the old stories of the underground stream from the Euphrates to Tyre, from Lake Phiala round the base of Hermon to the source of the Jordan, and the like; but, after all, there is a connexion, and a strong one, though not exactly as the geographers of old may have dreamed.

Of the fourteen species of fishes collected by us in the Lake of Galilee, all are of an African character, and most of them identical with the fishes of the Nile. Of the genus *Chromis,* a peculiarly African genus, we find four species, one of them, *Chromis nilotica,* identical with the common Egyptian fish, and three other species not hitherto described. Moreover the Lake of Galilee is the most northerly spot at which any member of this genus has yet been discovered; and here, at the northern limit of the family, we find no less than four species—a most unusual proportion in an outlying region. Further, the genus *Hemichromis* was originally founded upon two species brought from the Gaboon river. Last year Dr. Kirk, of Dr. Livingstone's expedition, brought home no less than seven species from the Lake Nyassa; and now another species of this very restricted genus appears from the Lake of Galilee.

Surely these coincidences point to an ancient connexion between the Jordan and the Red Sea; and that the Lake of Galilee is perhaps only the most northern of that long line of inland seas which Speke, Burton, Livingstone, and other explorers have been so rapidly mapping out on the eastern side of the African continent.

Presuming, from its peculiar ichthyological fauna, the vast antiquity of that depression, we may naturally expect to find strong African affinities in its avifauna likewise. Not that the most locomotive group in nature can ever be found so restricted by geographical boundaries as the inhabitants of inland waters; but if there be any truth in the principles of geographical distribution, they ought to vary *similarly,* and some traces of the former African connexion of the valley should appear even in its ornithology. And this view is borne out by the results of our expedition. The number of species of birds obtained in Palestine was 322. Of these 58 are either peculiar or common to N.E. Africa; 7 species are either Indian, or find their most nearly allied congeners in the Indian and Persian fauna; 31 species of the 58 are peculiarly desert forms, and are either new or have been already included in Rüppell's accounts of the Arabian fauna; 260 of the whole number are included in the lists of the birds of South-eastern Europe or of Asia Minor. It is to be noted that all the species of an African character are obtained principally, and most of them exclusively, in the Ghor or Jordan valley. There appears to be no difference in the fauna on either side of this isolated strip of the tropics. The same birds, the Wood-Pigeons, Jays, and Woodpeckers of Carmel, equally abound in the forests of Gilead and Bashan; and I never obtained, or observed, on the highlands east of the Jordan a single species which we did not also secure on the western side, with the one exception of the Saker Falcon, a truly desert-loving Raptor.

It is between these two ranges that the ornithological treasures of Palestine are to be sought for; and I trust the Editor will forgive me for a somewhat irregular proceeding, in deferring, for the present, a systematic and annotated catalogue of the birds of Palestine, and plunging at once, after this long and dreary preliminary excursus, worthy of the 'Hierozoïcon' of Bochart himself, into the details of the life and death, the manners and customs, of some of our especial favourites.

First and least of these must be the Sun-bird—*Cinnyris osea* (Plate II.) of Prince Bonaparte, in the 'Comptes Rendus,' but more correctly, I believe, *Nectarinia osea* (Bp.).* The literary materials for the authentic history of this beautiful gem are scanty indeed. It seems to have escaped the notice of Antinori, and, strangely enough, of Hemprich and Ehrenberg also. The Duc de Vallombrosa brought the only specimen known in European collections before this year, and the type of Bonaparte's description.

But so distinguished a bird, if he has had no history, has at least some legendary traditions attached to his name. Most residents in Palestine will tell you of the "Jericho Humming-bird"—a true Humming-bird, and will not allow you to doubt the fact of its existence, as it has been seen by them, and was shot by the son of their friend or neighbour. They are not, however, so far astray as Mr. Gould's Devonshire friend, who held the honour of his county at stake in the maintenance of his assertion that Humming-birds were common there. Then these legends have the highest literary warrant: they are embodied in the journals of Lynch and of M. de Saulcy. The gallant Commodore (certainly a most truthful narrator, and most trustworthy, whenever on subjects within the range of his naval training and experience) saw the beautiful-spangled "Humming-bird," between the Dead Sea and Kerak.

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* I have preferred to retain the generic term of Illiger, *Nectarinia,* on the ground of undoubted priority, and being unable to recognize the principle on which Bonaparte has separated *Cinnyris* from *Nectarinia,* unless I were prepared to follow Cabanis and increase indefinitely the number of genera in this group. The characters on which the Prince relies appear too vague, while he has retained among *Nectarinia* such short-tailed species as *N. adalberti,* Gr.

M. de Saulcy, yet more fortunate, not only saw, in the Ghor es Safieh, at the south end of the Dead Sea, "Humming-birds with ruby and emerald frills," but afterwards obtained one of these wonders of the tropics, which however was never preserved, as an undiscriminating cat carried it off from the dissecting-table, where it had been left.

Our acquaintance with the Sun-bird commenced on the last day of the year at Jericho, when six specimens were obtained, close to our camp at Ain Sultān, the day after our arrival. The oases of the plains of Jericho appear to be its metropolis, and we never met with it excepting in the immediate neighbourhood of water. But wherever a few tamarisks, zizyphus-bushes, or graceful "retem" shade a fountain or straggling pool in some deep glen opening on the Dead Sea, there a few occur. The larger oases, however, of Jericho at the north-west and Safieh at the south-east end of the Dead Sea are the resorts of great numbers, which, though here to be found in almost every tree, are nowhere gregarious, but are noisy and pugnacious, the males chasing each other with loud cries, and as tenacious of their respective freeholds as Robins at home. The note is clear and monotonous, very much like the call of the Willow-Wren, but sharper, and often reminding one of the Blue Tit, yet with a more hissing sound. This is incessantly repeated from sunrise to evening, and the whereabouts of the male bird can at once be detected; but to see him is not so easy, as he ceaselessly hops in the centre of the very thickest and most impenetrable scrub, and darts very quickly and suddenly across the open from tree to tree. The male is extremely restless, and, as it twists and clings to one twig after another in search of insects, reminds one of the Titmouse, much more than of the Creeper, in its actions. It has a curious jerking flap of the wings, opening and closing them like *Tichodroma muraria.* Occasionally I have seen two rivals for the favours of a female singing on the top of a tree, and puffing out the brilliant orange and red axillary tufts, which only at such times are at all conspicuous. The female during the winter continually repeats the same monotonous note, but almost always remains stationary, or creeping slowly about in the very centre of a bush. One female had her quarters in a dense zizyphus-tree fifty yards from our tent, and was used as a decoy-bird by one of our party, who used to go and sit under the tree every morning for a fortnight, and would bring back two or three males, allured to their destruction by this fatal siren, who never left her retreat at the report of the piece. Alas for humanity! on the morning of our departure, her good service to this treacherous collector was rewarded by her own death, to be embalmed alongside of her many deceived admirers.

The female plumage is always brown-grey above, lightish olive-grey beneath, with lightish-yellow vent and under tail-coverts; the tail black, with metallic-green reflexions. The male varies much, and does not appear to attain the nuptial dress till after Christmas, which he loses again in the summer. Not more than one in four of the males we shot in January was in full plumage, the brillant metallic reflexions of the back, throat, and breast being interrupted by many brown feathers; and I have several times taken birds who had paired, and were breeding, in this incomplete livery. We ascertained that this state of plumage is certainly not the mark of immature birds, as it is always accompanied by the bright axillary tufts, which the young birds do not acquire till after their first moult, prior to which they have the sombre dress of the female, but with a lighter-coloured breast.

In form and size *Nectarinia osea* resembles *N. asiatica*, Lath., but has the upper portion of the axillary tufts rich red, instead of orange, and has the metallic reflexions of the back and throat bright green, instead of dark purple, which colour is only shown on the lower part of the breast and the forehead. It is also not far removed from *N. affinis,* Rüpp., from Abyssinia, but differs from it likewise by the greater extent of the green instead of purple reflexions.

As we crept along the western shores of the Dead Sea, we met with a few pair up the different Wadys where water remained; but here, deprived of cover, they are extremely shy and wary. In the Ghor es Safieh, under Kerak (the richest and the hottest portion of the whole Ghor), the Sun-birds were as numerous as at Jericho. On our return we found them plentiful by the wooded banks of the Jordan, but never far removed from its banks. In the month of March, we ascertained their summer range to be more extensive than we had expected; for one day, while shooting on the south side of Mount Carmel, on the slopes which run down to the Plain of Sharon, Mr. Bartlett declared he had heard their note; and after a long pursuit, I secured a pair close to the edge of the plain, not far from the sea. The female, when shot, dropped a soft egg. This was the only occasion on which the bird ever occurred to us away from the Jordan valley; but I have reason to believe it has been obtained in Asia Minor, as a French collector at Smyrna described to me a bird he had once received from the interior, which could only, I think, have been a female Sun-bird. He stated that, unfortunately, it was too badly shot for preservation.

A few days after our visit to Carmel, we again met with the Sun-bird in a deep gorge, the Wady Hamam, opening on to the Plain of Gennesaret. Mr. Cochrane and I pursued it in vain; but, while searching among the cliffs for Vultures' nests, Mr. Cochrane pulled down from the extremity of the twig of a hyssop-plant what he imagined to be an old nest of *Drymœca gracilis.* It had the external appearance of a loose ball of rubbish, such as might have been floated down by a sudden flood and caught in the branch of a tree. After tossing it about for some time, he threw it towards me; and on examining it, I was dismayed to find it a fresh nest, very firm and compact inside, with a small hole in the side, and containing two broken fresh eggs, elongated, of a greenish white, with a zone of darker green-grey spots near the larger end. We searched in vain for another, and, mourning our ill-luck, left the neighbourhood the next day. On the 23rd of May I returned to the same place; and while climbing up to a cave, the resort of *Hirundo rufula,* I struck with my head a little ball of straw and leaves attached to the extremity of a castor-oil plant, not two yards from the spot where Mr. Cochrane had found his nest. It contained three eggs, quite fresh, and was beautifully shaded both from the sun and from observation. This nest is the one figured in the plate. I was fortunate enough to secure the male bird in full plumage. Close by was another nest, from which the young had been reared; and we watched the female feeding her young family of three, in the hyssop overhead. I am inclined to believe that they had bred twice; for we could not make out a third pair.

Meanwhile I had returned, in April, to our old quarters at Ain Sultān, near Jericho, accompanied only by a single muleteer and one guard. On the afternoon of my arrival, on the 13th of April, I discovered by myself no less than seven nests—one with three eggs, one with two hard set, one building, and four with young. All were in precisely similar situations, suspended from the extremity of a small twig hanging down in the centre of a "nubk" tree, whose thorny branches spread in a circle so close to the ground that I had in every instance to creep on all fours till I could get under the trees. The nests in these places were perfectly inaccessible to the attacks of the serpents and lizards which abound there. The nests are at first very neat and compact, long straws and fibres being attached to the extremity of the drooping bough, and on these the bag is woven. When finished, a few loose leaves and straggling straws are loosely fastened all round, to elude observation and remove the appearance of art. I kept three young birds for ten days in a box, and fed them with bunches of the blossom of a jasmine and convolvulus. The hen bird lingered always in the neighbourhood of the tent, attracted doubtless by their cries; and when we were about to leave, I turned out the two surviving captives, and was glad to see the parent take to them at once, and attend to them in an adjoining tree.

Another characteristic bird of the Jordan valley is the Galilean Swift (*Cypselus galilæensis,* Antinori). Unlike its congeners, this Swift is a permanent resident in the district it inhabits. In many genera of birds, it may be observed that those species which have the most extended northerly have also the most extended southerly range; and that those which resort to the highest latitudes for nidification also pass further than others to the southward in winter. Thus the migratory Fieldfare and Redwing, visiting regions north of the limits of the Thrush and Blackbird, on their southward migration likewise leave their more sedentary relatives behind. The Brambling, which passes the Chaffinch in Norway, leaves it also in Europe, and crosses the Mediterranean every winter to the Barbary States. The Egyptian and Collared Turtle-Doves remain throughout the year in North Africa and Syria; but the common Turtle (*T. auritus*, Temm.), so abundant in those countries in summer, never leaves a straggler behind in November, and yet in spring advances a thousand miles nearer to the Pole than they do. And thus, while *Cypselus melba* does not return to Palestine until about the 12th February, and the yet more northerly *Cypselus apus* was not observed until the last week in March, *Cypselus galilæensis* is building before the return of the one, and has hatched its young when the other arrives. It may often be seen, during the month of January, high in the air on the plains of the Jordan, and never descending within gunshot until towards evening. The broad white rump gives it at first sight the appearance of the House-Martin, for which indeed it might be mistaken, were it not for its note, which is peculiar and melodious, consisting of two semitones often and rapidly repeated with a tremulous twitter, and most unlike the harsh scream of the Common Swift. Its flight is quite as rapid and darting as that of the other *Cypselidæ*; and in spring we often noticed large flocks of all three species intermingled far aloft, and feeding together on the wing. While, however, the White-bellied bird would frequently sweep nearer the ground, and the Common Swift occasionally follow it, their little congener never during the day descended from its elevation, and often for hours have we waited in vain for the chance of a shot.

Our first specimens were obtained by Messrs. Shepherd and Upcher on the top of the cliff of the Wady Hamam, by the Plain of Gennesaret, on the 8th of March, when the birds were building in society. Their capture was no easy task, as they never approached the cliffs till toward evening, and then, unless they could be brought down on a little projecting promontory near the edge of the wady, it was in vain to hope to secure the spoils. After two or three shots, they became far too wary to afford another chance.

Unlike the Sun-birds, they mount to the highest portions of the enclosing mountains of the Ghor; and Mr. Bartlett obtained a single specimen, consorting with *Cypselus melba*, near the highest part of Mount Ajalon, east of the Jordan. But it was not until the 1st of April that, in company with Mr. Cochrane, I secured the nest and eggs. Under an overhanging ledge in the fine ravine to the south-west of the Plain of Gennesaret, at the height of 800 feet from the bottom of the wady, we discovered a cluster of nests, about twelve in number, huddled together in one mass on the roof of an open cavern, upwards of twenty feet from its floor. The nests were large, circular, each about half a sphere, and of the capacity of about a quart—a very great size for so small a bird—and composed of straws, large and small feathers, and fine grass, very strongly agglutinated together, and as firmly attached also to the rock. So stout was the consistency of this felting, that it was with some difficulty the nests could be either separated or torn asunder. The saliva of the bird must be the gluten employed; and the construction exhibits a marked approach to the architecture of the genus *Collocalia*, the Edible Swift. The outsides of the nests were decorated with a liberal supply of the loose downy feathers of the Egyptian Vulture, slightly attached by gluten—a covering which I have observed to be omitted in the nests built inside caverns; and there is no warm lining whatever. After laying ineffectual siege for half a day, we were reduced to the very vulgar and unsatisfactory expedient of collecting all the sticks we could obtain, splicing them together, and with a fork at the top, tearing down the nests as best we might, while one of the party attempted to catch the eggs as they fell in an open butterfly-net. Sad was the havoc, and loud and indignant the complaints of the birds as they dashed backwards and forwards overhead. But, besides many fragments, we did actually succeed in saving two sound eggs, both nearly ready to hatch. Several of the broken eggs were quite fresh.

On my return to Jericho, I found, on April 14th, that all the Swifts which bred in the caves of the Jebel Quarantania had already hatched, and that some of the young were fledged and had left the nest. Yet, on proceeding north the second time, and revisiting the scene of our first bird-nesting exploit by Gennesaret, the birds we had so plundered had repaired their nests and were again sitting. This was on May 7th. Having no desire to exterminate these little confederates, we did not again disturb them, but proceeded to visit a cave in which, on my former visit, I had discovered a pair of *Hirundo rufula* building. As we entered, a pair of the pretty Swallows dashed out, and we soon saw the nest at which I had seen them at work, evidently finished. It was at the further end of a low cavern, and Mr. Cochrane, going towards it, was surprised to see a Galilean Swift fly out. Putting up his hand, he caught the other Swift, a female, in the nest, and afterwards drew out two Swift's eggs, quite fresh. It seems probable that, after we had destroyed their first nest, this pair of Swifts had taken possession of that of the Swallow, close at hand, to save time and labour, and had adapted it to their own purposes by simply adding an agglutinated straw-and-feather doorway to the original construction of clay. The nest of *Hirundo rufula* is very like that of our House-Martin, but larger, and attached to the roof of caves. It has also a long wide passage or neck for entrance, which in this instance the Swifts had contracted. The displaced owners had not, however, quitted the cavern; for they had patiently built another nest for themselves near the entrance, which they were then occupying.

We observed the Galilean Swift as far north as the marshes of Huleh (Waters of Merom), but never either further north or away from the valley; though the Common Swift abounds in myriads on and about Mount Hermon, and there are large colonies of *Cypselus melba* in all parts of the country, up to the highest ranges of the Lebanon.

Far more circumscribed in its range is the *Crateropus chalybeius*, Bp., first brought to the knowledge of European ornithologists by the Duc de Vallombrosa. I am not aware of the existence in the Old World of any other very distinct species restricted within so limited an area. It does not even extend up the valley of the Jordan, but is strictly confined to the larger oases round the Dead Sea. It is well known to European residents as the "Hopping Thrush" of Jericho, and is evidently the "Mocking-bird" of Lynch's 'Narrative.' It is abundant in the rich oases of Ain Sultān and Ain Duk, at the north-west of the Dead Sea, in the sultry corner at the north-east, under the hills of Moab—the ancient plain of Shittim, and at the south-east end, in the luxuriant tangles of the Safieh. A few inhabit the shrubs of Engedi; and we found it once or twice at the Wady Zuweirah, at the south-west of the Dead Sea. Nowhere else did it come under our observation; and thus we find a distinct and most characteristic species limited to an area of forty miles by twelve, and not occupying more than ten square miles in the whole of that area, so far as our present knowledge extends. There is a closely affined species, *Crateropus fulvus*, Bp., in the Algerian Sahara, similarly restricted in its habitat to the dayats, or waterless oases, and the thorny shrubs which flourish there. Though a smaller bird, and very different in colour, yet in habits, nidification, and note it exactly resembles the *C. chalybeius*. This latter is one of the most lively and amusing of birds, and in many of its grotesque attitudes and motions reminds one of the Magpie. Clad in a sombre suit of "dittos," he eschews the gaudy plumage of the Smyrna Kingfisher and the Sun-bird above him, but, as he expands and erects his long tail, seems to maintain that it is elegance and grace of form, not brilliancy of colour, which ought to be appreciated. The *Crateropodes* are most sociable and noisy birds, always in small bands, though not in large flocks, hopping along the ground in long line, with jerking tail, and then, one after another, running up a bush, where they maintain a noisy conversation till the stranger's approach, when they drop down in single file and run along the ground, to repeat the same proceedings in the next tree. The nest is a large clumsy structure, placed always in the very centre of a thorn-tree, and requiring some little labour with the hatchet to clear a way to it. It is composed entirely of strips of bark, loosely woven together, and without any other lining. One in my collection looks much like a very large nest of Savi's Warbler, from this peculiarity of the employment of but a single material. The eggs are four to six in number, dark rich green, smaller than those of the Common Thrush, and a little larger than the eggs of *Crateropus fulvus.* The parent birds continue their attention to the young for some time after they leave the nest; and I have been amused in watching the manner in which the old bird will remain at the top of a bush, scolding and screaming at the intruder till all her brood have dropped down one after the other and are running to the next tree, when she suddenly runs down and follows them in silence, to repeat the same manœuvre so long as she is followed. Their food consists principally, if not entirely, of the berries of the zizyphus or jujube, which are to be found at all seasons of the year.

The Bulbul of Palestine (*Ixus xanthopygius*, Hempr. and Ehrenb.; *Ixus vallombrosæ*, Bp.) is far more widely distributed than the *Crateropus*, though not so numerous in its special localities. It is very like the *Ixus aurigaster*, Vieill., and *Ixus capensis*, Smith; but is easily distinguished from the former by its deep-black head and throat, sharply defined from the paler brown of the back instead of melting into it, by its much lighter breast and abdomen, and by its black tail. From the latter it is distinguished by its black head, and by the lighter colour of the body above and beneath, as well as by the black tail. It is never gregarious, but scattered throughout the year in pairs, and commences its song soon after Christmas. For its music it well merits the name of Bulbul; and I never heard a finer songster, except the Nightingale, which it much resembles in power and variety of note. It is easily approached, and by no means so shy as most of the *Turdidæ.* The nest is very small and neat, placed either in the small fork of a tree or on a side branch, and covered externally to match the bark of the branch on which it rests. In character and structure it much resembles that of the Chaffinch. The eggs are three, seldom four; and while some pairs have hatched their young in March, others do not lay till towards the end of April. The egg partakes of the beautiful character of all the *Pycnonotidæ,* covered with rich chocolate, crimson, and pink blotches and spots, and about the size of that of the Skylark. It is subject to considerable variation in the intensity and size of the markings. We found the *Ixus* plentiful in the whole of the Jordan valley, and in all the sheltered wadys and wooded lowlands on both sides of the river, as well as in the plains of Sharon, Acre, and Phœnicia, the glades of Carmel, and occasionally even in the sea-bound valleys of the Lebanon as far as Beyrout, but never in the hill-country. I have never seen specimens from Egypt or Asia Minor, though I have met with it in a collection said to have been made in the Red Sea. The Bulbul is a favourite cage-bird of the natives, is easily tamed, sings and thrives well in confinement. My friend Mr. Wright, of Malta, possessed one for many months which had been obtained at Beyrout *.

Drymœca gracilis (Licht.) is another of the characteristic birds of Palestine, and, like all the others I have named, is a permanent resident. I had met with it in Egypt, where, however, I believe, it does not remain throughout the year, and it is certainly there neither so conspicuous nor so easy of observation in its habits as in Syria. It is here spread throughout the whole country wherever there is water, preferring the neighbourhood of streams, and remaining in the low plains during winter, but ascending to the hill-sides in spring. In its actions it has much of the character of the *Salicariæ,* and even in its note also, excepting in tone, for it is without their jarring harshness. The little fellow will often run up a reed or tamarisk-twig just in front of your horse, and then, after giving forth his blithe shrill note for a few seconds, as he clings, with head erect and tail downwards, will suddenly rise into the air and hover overhead, warbling like the Cisticole, or as the Willow Wren will sometimes, but rarely, do at home. The nest of *D. gracilis* is neat, well-built, and not difficult to discover. Though domed and with an entrance at the side, it is not suspended, but placed either in the fork of a sage- or tamarisk-bush, or else woven among a bunch of small reeds, never more than two feet from the ground. Its eggs are very beautiful; they are from three to six in number, seldom more than four, of a beautiful pink, with a zone of darker red near the larger end, and in shape and colour resemble some of the *Prinia*-group of India and China.

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* In Thompson's 'Birds of Ireland' (vol. i. p. 154) it is mentioned, on the authority of Mr. R. Ball, that three birds, no doubt of this species, were obtained for the Zoological Garden in Dublin before the year 1845.—Ed.

[To be continued.]

VI.—*List of Birds received from Port Denison, Queensland.*

By Edward P. Ramsay.

I beg leave to forward a list of birds collected at Port Denison *, Queensland, by Mr. Rainbird, who has lately returned thence to Sydney, bringing with him a large number of rare birds' skins. Many of the specimens are still in my own collection, others in that of the Sydney Museum; and a list of them may throw some further light on the distribution of species.

1. Aquila fucosa (Gould, B. Austral. i. pl. 1).
2. Ichthyætus leucogaster (Gould, i. pl. 3).
3. Haliastur leucosternus (Gould, i. pl. 4).

For all the information I at present possess respecting the nidification of this interesting species I am indebted to Mr. Rainbird. The nest of the Red-winged Fish-Hawk is by no means so bulky a structure as that of many of its allies, nor is it so large as one would expect from a member of the family to which it belongs. In almost every instance the examples found by Mr. Rainbird were placed near the tops of the larger trees in belts of mangroves skirting the edges of salt-water swamps and marshes in the neighbourhood of Port Denison. They were composed of twigs and dead branches of mangrove, lined with a finer material. One, from which that gentleman shot the bird, and brought me the egg upon which she was sitting, was lined with tufts of lichen; and in this instance the egg was placed upon various fish-bones, shells and claws of crabs, &c.; the edges and sides were beautifully ornamented with long streamers of bleached sea-weed, which gave the nest a novel and pleasing appearance. The egg has a rough ground of a bluish-white colour, with a few minute spots of brownish-red near the larger end; it is of an oval form, 2 inches 1 line in length by 1 inch 6 lines in breadth. Mr. Rainbird states that this species of Hawk is far from rare about Port Denison. Throughout the whole year many may be seen hovering over the water near the mouths of the creeks, and over the salt-marshes, which are invariably edged with dense belts of high mangroves.

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* Port Denison is nearly in lat. 20° S., long. 148° E. of Greenwich.—Ed.

4. Falco frontatus (Gould, i. pl. 10).

5. Strix personata (Gould, i. pl. 29).

6. Strix delicatula (Gould, i. pl. 31), ? var.

7. Athene connivens (Gould, i. pl. 34).

8. Dacelo leachi (Gould, ii. pl. 19).

9. Halcyon macleayi (Gould, ii. pl. 24).

10. Dicæum hirundinaceum (Gould, ii. pl. 34).

11. Pardalotus melanocephalus (Gould, ii. pl. 40).

12. Graucalus hypoleucus (Gould, ii. pl. 57) ?

The specimen of this bird has faint wavy lines on the breast, the rest of the under-surface being white; but in every other respect it agrees with Mr. Gould's description of *Graucalus hypoleucus* (P. Z. S. 1848, p. 38) and his figure in the 'Birds of Australia.'

13. Graucalus swainsoni (Gould, ii. pl. 58).

14. Campephaga jardinii (Gould, ii. pl. 60).
Not uncommon.

15. Campephaga karu (Gould, ii. pl. 61).
Two specimens.

16. Campephaga leucomela (Gould, ii. pl. 62).

17. Dicrurus bracteatus (Gould, ii. pl. 82).
Very plentiful.

18. Rhipidura motacilloides (Gould, ii. pl. 86).

19. Myiagra plumbea (Gould, ii. pl. 89).

20. Monarcha trivirgata (Gould, ii. pl. 96).

Mr. Rainbird procured several specimens of this beautiful Flycatcher: during November and December he found them in pairs.

21. Petrœca superciliosa (Gould, iii. pl. 9).

Several of the specimens from Port Denison are *much smaller* than those figured in the 'Birds of Australia,' but are similar to them in markings.

22. Malurus melanocephalus (Gould, iii. pl. 26).

Some of the examples are larger than those I have procured from the Clarence and Richmond Rivers (New South Wales), and several are very bright in colour.

23. Estrelda annulosa (Gould, iii. pl. 81).

24. Estrelda phaeton (Gould, iii. pl. 83).

25. Donacola castaneothorax (Gould, iii. pl. 94) ?

26. Chlamydera nuchalis (Gould, iv. pl. 9).

Several specimens obtained.

27. Glycyphila fasciata (Gould, iv. pl. 30).

Not rare.

28. Glycyphila ocularis (Gould, iv. pl. 31).

Common.

29. Ptilotis flava (Gould, iv. pl. 42).

Not rare; six specimens obtained.

30. Tropidorhynchus corniculatus (Gould, iv. pl. 58).

31. Myzomela obscura (Gould, iv. pl. 67).

Plentiful.

32. Nectarinia australis, Gould, P. Z. S. 1850, p. 201.

According to Mr. Rainbird, numbers of this beautiful little Sun-bird may be seen, on bright mornings, among the leafy tops of the mangrove-belts near Port Denison, which I have already mentioned. They are there ever darting out to capture some insect on the wing, returning and disappearing again in the thick foliage, or perching upon some topmost twig, to devour their captures, and show their shining purple breasts glittering in the sun. During the hottest part of the day the Sunbirds betake themselves to the thick scrub, which in many places runs down quite to the water's edge. They breed in the months of November and December. One pair chose a little break in the scrub, within a few yards of the water, where, facing the rising sun, they constructed their nest (which I now have), suspending it by the top from the dead twig of a small shrub, at the foot of a large "Bottle-tree" (*Sterculia rupestris*). The nest is of an oval form, much resembling and suspended in the same way as that of *Acanthiza lineata,* with a small hood over the opening, which is near the top. It is composed of fibrous roots, and shreds of cotton-tree (*Gomphocarpus fruticosus*) bark, firmly interwoven with the webs and cocoons of various spiders, and a few pieces of white sea-weed ornamenting the outside. It is lined with feathers and the silky native cotton, and is about 5 inches long by 3½ in. in diameter. The eggs, I regret to say, I did not receive, as Mr. Rainbird was obliged to come away before they were laid.

33. CUCULUS ——?

34. EUDYNAMIS FLINDERSI (Gould, iv. pl. 91).

35. CENTROPUS PHASIANUS (Gould, iv. pl. 92).

36. SITTELLA LEUCOCEPHALA (Gould, iv. pl. 102).

37. PLATYCERCUS PALLICEPS (Gould, v. pl. 26).
Common.

38. CARPOPHAGA LUCTUOSA (Gould, v. pl. 60).
Plentiful at certain seasons, when they arrive in large flocks.

39. MEGAPODIUS TUMULUS (Gould, v. pl. 79).

40. SYNŒCUS AUSTRALIS (Gould, v. pl. 89).

41. THRESCIORNIS STRICTIPENNIS (Gould, vi. pl. 46).

42. MYCTERIA AUSTRALIS (Gould, vi. pl. 51).

43. TADORNA RADJAH (Gould, vii. pl. 8).
One specimen of this beautiful Duck has the whole of the

underside, except the throat and neck, smeared with reddish chestnut, almost the same tint as that of the pectoral band, which in this example is much narrower than usual.

44. Dendrocygna arcuata (Gould, vii. pl. 14).

45. Dendrocygna eytoni (Gould, vii. pl. 15).

St. Paul's, Newtown, Sydney, New South Wales,
March 5, 1864.

VII.—*Note on two rare Species of the American genus* Dendrœca. By P. L. Sclater, M.A., Ph.D., F.R.S., Secretary to the Zoological Society of London.

In the 'Proceedings of the Zoological Society of London' for 1860 (p. 298) Mr. Salvin and I described a new species of the American genus *Dendrœca,* intermediate between the well-known *D. virens* and its western representative, *D. townsendi,* under the name *chrysoparia.* The distinguishing marks of this species (which was established on two skins obtained by Mr. O. Salvin in the mountainous district of Vera Paz *, Guatemala) were the black back and white abdomen. In both *D. virens* and *D. townsendi* the back of the adult male is olive; and the breast, in the latter bird, is bright yellow, in the former bird decidedly tinged with that colour. The sides of the head in *D. chrysoparia* are pure yellow, brighter than in *D. virens,* with a distinct black line through the eye; in *D. townsendi* there is a large and conspicuous black auricular patch. In fine, the new species seemed to us (as, in fact, it is) evidently readily distinguishable from the two previously known species of the genus.

In 1862, in an interesting series of birds collected by M. Boucard in Southern Mexico, which were submitted to my examination by M. Sallé, I found three examples of a *Dendrœca* belonging to the same group of species. Not having Mr. Salvin's types at hand for comparison, I concluded, somewhat hastily, seeing that they possessed some of the characters above mentioned, that they were specifically identical with *D. chrysoparia*; and I accordingly referred them to that species, both in my notes on M. Boucard's collection (P. Z. S. 1862, p. 19) and in my American Catalogue (p. 358).

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* "On the highest point of the road between Salamá and Tactic." (Salvin in 'Ibis,' 1860, p. 273.)

In the following year, 1863, Mr. Salvin described and figured a new *Dendrœca* from Guatemala*, of which he had obtained three specimens during his last expedition to that country in company with Mr. F. Godman. This bird he proposed to call *D. niveiventris*, remarking at the same time, quite correctly, that it was this species, and not the true *D. chrysoparia*, that I had obtained from M. Boucard's collection.

As I have just said, Mr. Salvin was quite right in separating his *D. niveiventris* from *D. chrysoparia*; for, in truth, the adult males of these two species are conspicuously different. While, however, I take some credit to myself for assisting my friend to rectify my own mistake on the point, I must at the same time acknowledge myself guilty of the crime of abetting him in characterizing as new a species which had been long previously described, Mr. Salvin's *Dendrœca niveiventris* being certainly nothing else but *Dendrœca occidentalis*, Baird (*Sylvia occidentalis*, Townsend).

I have, however, again lately had the pleasure of examining specimens of the true *D. chrysoparia* through the kindness of Mr. Dresser. Two skins obtained by that gentleman, during his recent travels in Texas, from the well-known American naturalist, Dr. A. L. Heermann, seem without doubt to belong to that species, and thus give us indications of an interesting extension of its previously known range. One of Dr. Heermann's specimens, an adult male of *D. chrysoparia*, is labelled as having been procured "on the Medina river, Howard's Raunch, San Antonio, Texas," in the early spring of the year. The second is without any label, but is probably an immature male of the same species.

It would thus appear that there are four closely allied species of *Dendrœca* of this section, inhabiting various parts of North America, of which the diagnosis may shortly be given as follows:

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* P. Z. S. 1863, p. 187.

(1.) DENDRŒCA VIRENS.

Motacilla virens, Gm.; *Dendrœca virens*, Baird, B.N.A. p. 267.

♂. Dorso olivaceo, pileo concolore, capitis lateribus flavis: gutture toto nigro: abdomine albo, pectore flavo induto, lateribus nigro flammulatis.

♀. Mari similis, sed coloribus dilutioribus, gutture flavo (*Baird*).

Hab. Eastern United States to Missouri, descending southwards through Mexico to Guatemala.

(2.) DENDRŒCA OCCIDENTALIS.

Sylvia occidentalis, Townsend. *Dendrœca occidentalis*, Baird, B.N.A. p. 268. *D. chrysoparia*, Sclater, P.Z.S. 1862, p. 19, & Cat. Am. B. p. 358. *D. niveiventris*, Salvin, P.Z.S. 1863, p. 187, pl. xxiv. fig. 2.

♂. Dorso cineraceo, plumis nigro variegatis: pileo toto cum lateribus capitis læte flavis, nuchæ plumis nigricante terminatis: gutture circumscripte nigro: abdomine toto pure albo, lateribus immaculatis.

♀. Mari similis, sed coloribus dilutioribus gula media vix nigricante.

Hab. Pacific States, descending southwards to Oaxaca (*Boucard*) and Guatemala (*Salvin*).

(3.) DENDRŒCA TOWNSENDI.

Sylvia townsendi, Nuttall. *Dendrœca townsendi*, Baird, B.N.A. p. 269.

♂. Dorso olivaceo, pileo nigro: capitis lateribus flavis, plaga auriculari nigra: gutture nigro: abdomine medio flavo, inferiore albo, lateribus nigro flammulatis.

♀. Pileo dorso concolore, gutture et ventre summo flavescentibus, pectore et lateribus nigricante flammulatis.

Hab. Pacific States, descending southwards to Mexico, Oaxaca (*Boucard*), and Guatemala (*Salvin*).

(4.) DENDRŒCA CHRYSOPARIA.

Sclater & Salvin, P. Z. S. 1860, p. 298; Salvin, 'Ibis,' 1860, p. 273.

♂. Dorso et pileo toto supra nigris, stria angusta verticali flava: capitis lateribus flavissimis, stria per oculos nigra: gutture ad medium pectoris nigro: abdomine albo, lateribus nigris flammulatis.

♀. Supra olivacea; gutture et pectore albidis, nigro variegatis.

Hab. San Antonio, Texas (*Heermann*), descending southwards to Guatemala (*Salvin*).

VIII.—*Note on the Costa-Rican Bell-bird* (Chasmorhynchus tricarunculatus, *Verreaux*) *and its allies.* By Osbert Salvin, M.A., F.L.S., &c.

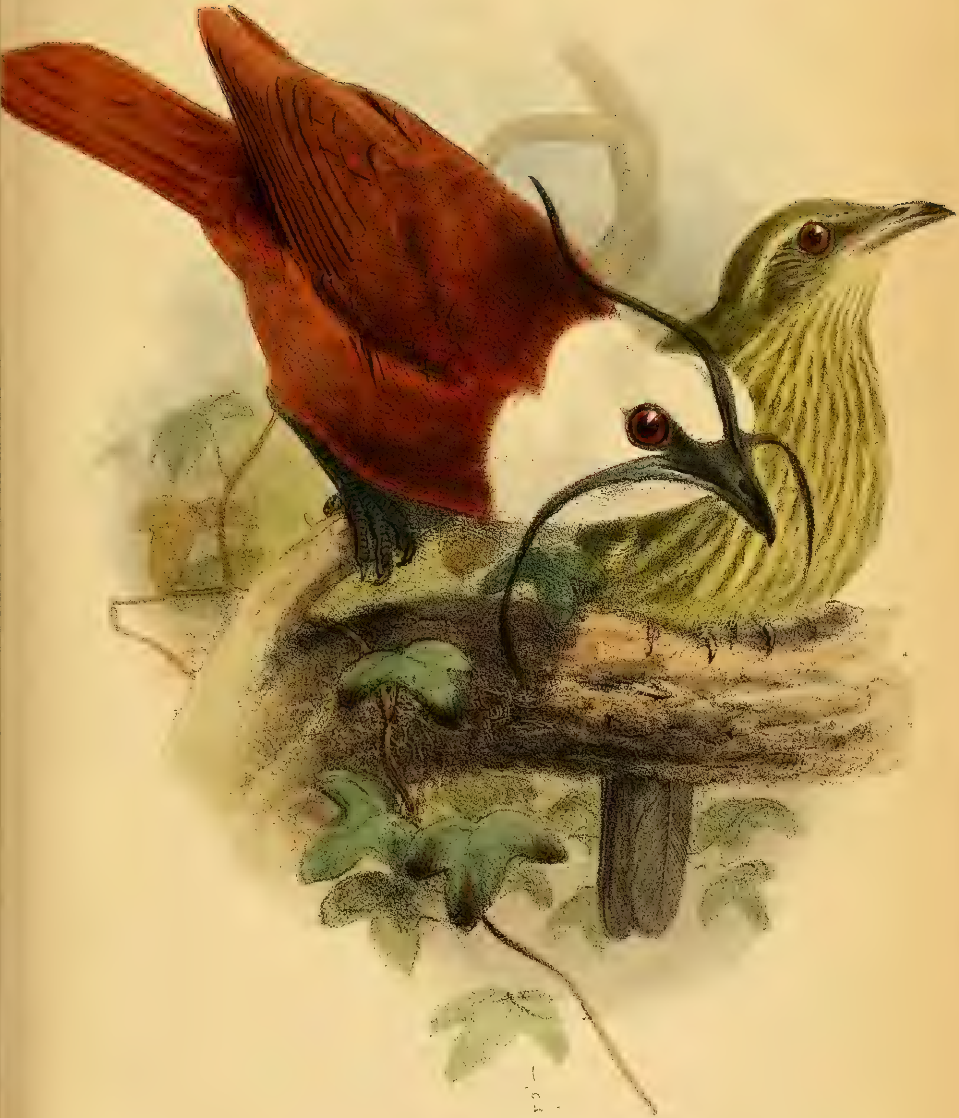
(Plate III.)

The accompanying plate, from Mr. Wolf's pencil, depicts a most remarkable bird from Costa Rica, a country which has until lately remained a *terra incognita* to the naturalist. The first indications of the rich fauna of this limited district were obtained by the Polish traveller Warszewicz, who, in his search for botanical rarities, procured the first specimen of the Bare-necked Umbrella-bird (*Cephalopterus glabricollis*) and several Humming-birds, then unknown to science. His keen eye, however, failed to detect this strange species, which fell to the lot of the brothers J. and E. Verreaux to describe (Rev. Zool. 1853, pp. 193–195), from specimens sent to them from Boca del Toro, a district lying at the base of the Volcano of Chiriqui, on the Atlantic slope, and forming a portion of the boundary of the political division between the New-Granadian Province of Veragua and Costa Rica.

Subsequently specimens were obtained by Dr. von Frantzius and sent to the Berlin Museum, where they were described at length by Dr. Cabanis in the 'Journal für Ornithologie' (1861, p. 253), together with a considerable series of skins, forming the only connected account which we possess of the birds of Costa Rica. To this paper I shall have again to refer.

The specimens from which the figures are taken form part of a most interesting series which has lately enriched Mr. Godman's and my own collection, and was sent to us by Enrique Arcé, a collector now in our employ, together with a fine series of Costa-Rican rarities. These birds were obtained near the small village of Tucurrique. Through information kindly procured for me by Captain Dow from Dr. von Frantzius, this district is described as a small plain surrounded by mountains, and drained by two rivers flowing into the Atlantic. Dr. von Frantzius, who has visited the place, conjectures that it is about 3000 feet above the sea-level, and gives the mean temperature at about 25·5° C. The rainfall is excessive.

Before adding the few remarks that an examination of the



J.Wolf lith.

M.& N.Hanhart,imp

CHASMORHYNCHUS TRICARUNCULATUS.

skins before me has suggested, I will briefly review the other known members of this limited genus. Four species are now included under the generic title *Chasmorhynchus,* which has no near allies in the family *Cotingidæ,* to which it belongs. Dr. Sclater in his Catalogue places it near *Querula,* which is, perhaps, its most convenient place. The range of these four species extends, so far as our present information goes, in broken intervals from S.E. Brazil to Costa Rica, no species occurring, to our knowledge, in the western forests of the Andes.

The four species may be thus shortly described:—

Species with throat naked: no upper caruncle. *C. nudicollis,* S.E. Brazil; *C. variegatus,* Brazil.

C. NUDICOLLIS (Vieill.), Nouv. Dict. viii. p. 164. *Chasmorhynchus nudicollis,* Temm. Pl. Col. 368, 383. *C. ecarunculatus,* Spix, Av. Bras. ii. p. 3. pl. 4. *Procnias alba,* Thunb.; Gray, Gen. B. p. 280; Sclater, Cat. p. 258.

♂. Albus, ecarunculatus: regione oculari et gula nudiusculis, plumulis nigris partim vestitis; linea nigra angusta utrinque supra oculos transeunte mesorhino terminata.

♀. Olivascenti-viridis: subtus variegata plumis medialiter dilutioribus; capite obscure fusco.

Hab. S.E. Brazil.

The bare parts of the chin and round the eye are coloured green both by Temminck and Spix.

C. VARIEGATUS (Gmel.), S. N. i. p. 841. *C. variegatus,* Temm. Pl. Col. 51; Sclater, Cat. p. 257.

♂. Albus: capite toto brunneo: alis nigris, carunculis multis nudiusculis e gula pendentibus: regione oculari nigra.

♀. Fœminæ præcedentis similis, sed capite dilutiore, carunculis nullis.

Hab. Brazil.

In Temminck's plate the gular caruncles are vermiform in shape, about 1¼ inch long, and coloured purplish.

An immature bird in Dr. Sclater's collection which has almost assumed the adult dress shows only very small caruncles.

Species with throat feathered and possessing a caruncle on the base of the bill. *C. niveus,* Cayenne, and *C. tricarunculatus,* Costa Rica.

C. NIVEUS, Bodd. (ex Buffon, Pl. Enl. 793, 794); Sclater, Cat. p. 258.

♂. Omnino albus: caruncula una e capite crescente plumulis albis male vestita.

♀. Similis præcedentibus, pileo et dorso concoloribus.

Hab. Cayenne.

In one of Buffon's figures an adult male is shown with the caruncle erect, in the other (an immature bird) it hangs over the bill.

C. TRICARUNCULATUS, J. & E. Verreaux, Rev. Zool. 1853, p. 193; Cab. Journ. f. Orn. 1861, p. 253; Scl. Cat. p. 258. (Plate III.)

♂. Castaneo-brunneus, capite toto cum collo et gula ad pectus albis: carunculis tribus, una e fronte et duabus rictalibus exorientibus.

♀. Ecarunculata, similis præcedentibus, pileo et dorso concoloribus.

Hab. Costa Rica.

Towards the base of each caruncle a few rudimentary feathers are scattered. They are scarcely to be seen and are hair-like in structure.

The following extract from Mr. Waterton's well-known 'Wanderings' gives the only full account of the habits of the one species, *C. niveus,* found in Cayenne.

Speaking of the several Cotingas of the country he describes, he says, "The fifth species is the celebrated 'Campanero' of the Spaniards, called 'Dara' by the Indians, and 'Bell-bird' by the English. He is about the size of the Jay. His plumage is white as snow. On his forehead rises a spiral tube nearly three inches long. It is jet-black, dotted all over with small white feathers. It has a communication with the palate, and when filled with air it looks like a spire; when empty it becomes pendulous. His note is loud and clear like the sound of a bell, and may be heard at the distance of three miles. In the midst of these extensive wilds, generally on the dried top of an ancient mora, almost out of gun reach, you will see the Campanero. No sound or song from any of the winged inhabitants of the forest, not even the clearly pronounced 'Whip poor Will' from the Goatsucker, causes such astonishment as the toll of the Campanero. With many of the feathered race, he pays the common tribute of a morning and evening song; and even when the meridian sun has shut in silence the mouths of almost the whole of animated nature, the Campanero still cheers the forest. You may hear his toll and then a pause for a minute, then another toll and then a pause again, and then a toll and again a pause. Then he is silent for six or eight minutes and then another toll, and so on. Acteon would stop in mid chase, Maria would defer her evening song, and Orpheus himself would drop his lute to listen to him, so sweet, so novel and romantic is the toll of the pretty snow-white Campanero. He is never seen to feed with the other Cotingas, nor is it known in what part of Guiana he makes his nest." ('Wanderings in South America,' Ed. 1836, pp. 120, 121.)

Another species is described as having a note like the sound produced by the blows of a hammer on an anvil.

From dried specimens it is impossible to make any satisfactory dissection of the caruncles, to ascertain whether or not any communication exists through means of which air could be passed so as to inflate them and cause them to become rigid. On opening the caruncle of an immature male I found that fine fibrous tissues adhered to the enclosing skin. This would show that in life the caruncle is not hollow, and that, if the internal structure is cellular and capable of inflation by air, these tissues would prevent the outer skin from swelling and taking a bladder-like form. If inflation actually is produced, as analogy with the Cayenne bird as described above by Mr. Waterton would certainly suggest, it still remains to be seen from what source the air-pressure is derived. The question too arises, is the inflating-apparatus, if I may so call it, the growth of the maturing male, as are the caruncles themselves?

My own impression is that no inflation takes place, and that the bird possesses little or no voluntary muscular control over these excrescences, but that contraction or elongation takes place as in the fleshy protuberance over the bill of the Common Turkey. The same appears to be the case with the several members of the genus *Cephalopterus* (Umbrella-birds), one species of which is said to gather its throat-lappet under its throat in a bunch like a rose (*vide* Fraser in P. Z. S. 1860, p. 67) *. A muscular contraction would cause one of these caruncles to become more rigid, as in the familiar case above cited.

The actual use and economy of external appendages such as those possessed by birds of this genus is extremely obscure. Their possession by the male only, certainly indicates that the special benefit conferred upon the species is sexual, the result of "sexual selection," to be classed with the more brilliant plumage found in the males of so many birds. Similitudes sometimes suggest themselves in most dissimilar objects. Do not the curious appendages of this bird recall the long pendents of the Costa-Rican Orchid, *Cypripedium caudatum*?

The series of specimens now before me includes a presumed female without caruncles, and males in all stages of dress. It is well worthy of remark that the caruncles seem to commence their growth on the assumption of the adult plumage, and that they acquire their full development almost before the fully adult feather is assumed, showing that their growth must be very rapid. The upper caruncle from the bill first shows itself, the two rictal commencing later and growing unevenly.

In the Brazilian *C. variegatus* this rapidity of the growth of the gular caruncles does not seem to be the same. The young bird in almost adult dress, before referred to, has these caruncles quite small; they look like feathers that have not yet burst their cases.

In their description of *C. tricarunculatus*, MM. Verreaux suppose, from analogy with the other members of the genus, that the adult plumage of this species would be white—an idea only partially warranted, *C. variegatus* being an exception to the rule laid down. Dr. Cabanis, proposing the name *C. leucocephalus* for the Costa-Rican bird, in the paper before quoted, places too much stress upon the difference of locality of Dr. v. Frantzius's specimens and those of MM. Verreaux, where he says that very probably MM. Verreaux were right in their suggestion re-

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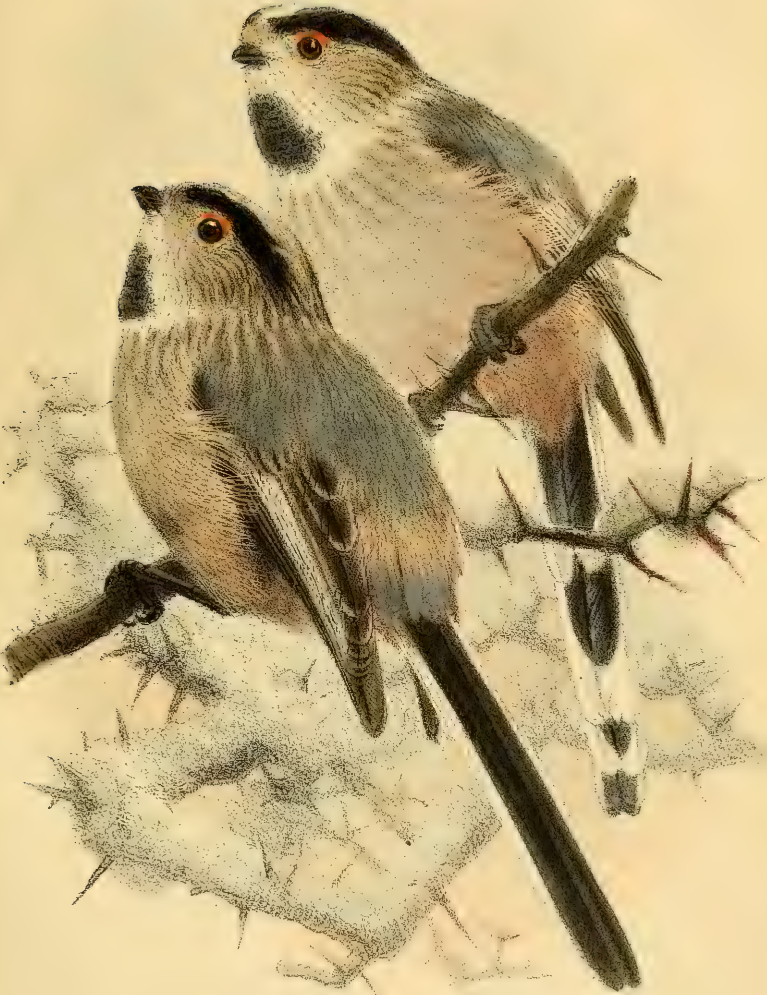
* Mr. Fraser's personal observations simply state that he could not inflate the lappet "by blowing into the mouth or nostrils" (P. Z. S. 1859, p. 143). There is nothing here to confirm the common report of the bird being able to "*inflate* the neck-appendage to nearly 3 inches in diameter."



J. Wolf. del. et lith.

M & N. Hanhart imp.

ORITES TEPHRONOTUS.

specting the adult. Boca del Toro must certainly be attached to the Costa-Rican or Veraguan fauna, and not to that of New Granada proper. It is more than probable that it appertains to the former; the latter, from recent research, appears to derive most of its forms which differ from those of the Southern Continent from Costa Rica, this doubtless amongst the rest.

I still hope to obtain further information respecting the habits of this most singular bird, as our collector, Enrique Arcé, is now exploring forests known to be frequented by it.

IX.—*Description of a new Species of Long-tailed Titmouse from Asia Minor.* By Dr. Albert Günther, F.Z.S., &c.

(Plate IV.)

I have lately received, from the Asiatic side of the Bosphorus, a male and female of a Long-tailed Titmouse, which differs so much in coloration from the common European and Japanese kinds that it appears to be entitled to the rank of specific distinction. I therefore designate it

Orites tephronotus. Upper surface of the head and neck light brownish olive along the middle, with a broad black band on each side, commencing almost from the root of the bill, and tapering in front and behind; cheeks and sides of the neck light brownish grey, with rather indistinct blackish longitudinal stripes; chin pure white; throat with a large rounded blackish spot, each of the blackish feathers being white at the end. *Back pure grey, without any black*; uropygium with a rosy tinge. Under surface of the body greyish white, with obscure brownish longitudinal stripes; under tail-coverts with a rosy tinge. Primaries and their coverts black; tertials and their coverts with a narrow whitish outer edge. Tail graduated and coloured as in *O. caudatus*. Bill and feet black. Iris of a light brownish-red colour, with an outer bluish-white ring.

Total length $5\frac{1}{2}$ inches; length of the tail $3\frac{1}{6}$ inches; length of wing, measured from the carpal joint, $2\frac{5}{10}$ inches; length of bill, measured from the front, $2\frac{1}{2}$ lines.

Both specimens were received by me from Dr. Royland, of

Pera, having been obtained in the month of December, by Mr. Thomas Robson, near the village of Havancore, where the species is common in wooded districts; it does not differ from the European species in its habits. *Parus major, P. palustris, P. ater,* and *P. cæruleus* inhabit the same localities, without perceptible difference from the European birds.

The generic name of *Orites* was established by Möhring, in his work entitled 'Avium Genera' (Auricæ, 1752, 8vo), and was afterwards adopted by Mr. G. R. Gray. The opinion that all genera, even those which have been properly named and well characterized by authors writing before the years of publication of the 10th or 12th edition of Linné's 'Systema Naturæ,' should be ignored and indiscriminately cancelled, appears to me to involve an act of great injustice towards the contemporaries of Linnæus. The idea of *genera* had been formed *before* Linnæus; and although he attached a definite value to genera, and gave them a systematic character by means of exact definitions, he has to share this merit with others. No one will deny that the foundation of our ichthyological system had been laid by Artedi, whose 'Genera Piscium' had been finished before the year 1735, but, owing to the premature death of the author, were not published before 1738, and passed into the 'Systema Naturæ,' without receiving a *systematic* character beyond that which had been given in the previous work.

In the same way Möhring's little work appears to me to be fully entitled to recognition on the part of ornithologists; and the names proposed by him ought to be used, at least in such cases as the present, where the generally adopted nomenclature can be altered without material inconvenience or any risk of confusion. One feels surprised to find at so early a period of zoological science such a systematic dexterity as is displayed by that author; and as regards the systematic character of his genera, they are at least as exactly defined by name, as well as by diagnosis, as those of the 'Systema Naturæ.' Thus, for instance, *Parus* and *Orites*, two genera of his "*ordo Passeres*," are characterized in the following terms (p. 45):—

"*Parus*, Linn. *Rostrum* subulatum, rectum, superficie versus apicem parum descendente. *Nares* plumis frontalibus tectæ. *Margo* narium annularis, prominulus. *Linguæ* apex truncatus, setis laceris. *Rectrices* caudæ fere æquales. *Digitus* cum ungue posticus antico medio cum ungue brevior.

"*Orites* (*Parus caudatus,* auct.). *Rostrum* subulatum, subrectum, apice incurvo. *Nares* plumis frontalibus largissime tectæ; *margo* narium planus, vix prominulus. *Linguæ* apex bifidus, segmentis laceris. *Rectrices* interiores gradatim multo longiores. *Digitus* cum ungue posticus antico medio cum ungue æqualis, vel vix brevior."

What can be more exact, more in the Linnean spirit, than the diagnoses of these two genera? And to reinstate the name of *Orites* is the more justifiable, because the usually adopted one of *Mecistura,* Leach, must give way to that of *Acredula,* Koch. For these last two generic names were published in 1816; but whilst the former is used only in a list of indigenous birds in the British Museum, without any characters, that of the last-mentioned author is accompanied by a very elaborate diagnosis (see Koch, 'System der baier. Zool.' p. 199).

⁂ As we do not now wish to admit into the pages of the 'Ibis' a discussion on the arid topic of Zoological Nomenclature (that subject being under the consideration of a Committee specially appointed by the British Association), we think it expedient here to mention, we cannot at all agree to the opinion expressed above by our good friend Dr. Günther. To us it seems only becoming that the Rules recommended by the former Committee on Nomenclature should be observed—at least so long as they remain unaltered by the present Committee. These Rules forbid us "to carry back the principle of priority beyond the date of the 12th edition of the 'Systema Naturæ'"*, *i. e.* 1766. All Möhring's genera are thereby excluded. If, as Dr. Günther suggests, some of them should be admitted and others not, there will always be a difficulty as to where the line should be drawn. For instance, in the present case of *Orites*, it might be plausibly urged that the entirely different application of the term by Keyserling and Blasius would cause "material inconvenience" and "risk of confusion." But the inconvenience and confusion in ornithology that would arise from the adoption of all Möhring's generic names can hardly be exaggerated; and we think we have every reason to thank the framers of the British Association Rules for their consideration to naturalists of the present day by disallowing the names of Möhring and other writers prior to 1766. The practical advantage of justice to the living is infinitely preferable to the sentimental dread of injustice to the dead.—Ed.

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* We are not aware that the fact has been noticed by any writer on nomenclature, but the exception made by the Association Rules in favour of Brisson's genera virtually amounts to no exception at all. The *third* edition of his work was published in 1788; and being thus subsequent to the appearance of Linnæus's *twelfth* edition, the genera defined in it can stand of their own right from that date, under the exact words of the rule.

X.—*Recent Ornithological Publications.*

1. ENGLISH.

Dr. Jerdon has completed his great work on the 'Birds of India'*, by the publication of the Second part of his Second volume, or, as he now terms it, his Third volume. We have accordingly to tender him our most hearty thanks for the admirable manual thus placed at our disposal. The dawn of Indian ornithology has been long in breaking; we may now say safely that the sun has fairly risen, and, in the broad light shed by Dr. Jerdon's work, students and observers in India will have most abundant facilities of continuing their labours. We shall not presume to make any critical remarks on the volume before us; for we hope shortly to have it in our power to present our readers with a Commentary on the whole work from a pen entitled to write on the subject with no brief authority.

The Fifth and Sixth parts of Mr. Gould's magnificent 'Birds of Great Britain' have made their appearance. In spite of its high price, this work seems likely to become a most popular one on the subject. The contents of these two parts are as follows:—

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* The Birds of India: &c. By T. C. Jerdon, Surgeon-Major. In three volumes. Vol. III. Calcutta (G. Wyman and Co.): 1864. (London, Smith and Elder.)

Part V.

Sparrow-Hawk.
Tawny or Brown Owl.
Avocet.
Great Bustard.
Little Bustard.
Parrot Crossbill.
Common Crossbill.
White-winged Crossbill.
American White-winged Crossbill
Cuckoo.
Golden Plover (summer plumage).
  Ditto (winter plumage).
Rook.
Spotted Flycatcher.
Pied Flycatcher.

Part VI.

Rough-legged Buzzard.
Bittern.
King-fisher.
Ptarmigan (summer plumage).
  Ditto (winter plumage).
  Ditto (autumn plumage).
Redstart.
Black Redstart.
Field-fare.
Redwing.
Spotted Crake.
Olivaceous Crake.
Baillon's Crake.
Whin-chat.
Stone-chat or Furze-chat.

We think it rather a pity that Mr. Gould has admitted the *American* White-winged Crossbill to a place in this work. It may be justifiable enough to enumerate among "British" birds those species of other regions whose habitual range overlaps the habitual range of really "British" species, while at the same time their occurrence in these islands may be more or less frequent. But this, we believe, cannot be said of *Loxia leucoptera* for its normal distribution must necessarily be bounded by the pine-forests of the New World; and, unless we are greatly mistaken, the limits of coniferous trees in America do not extend to those high latitudes where the Nearctic and Palæarctic faunas inosculate. The excellence of the plates in all Mr. Gould's books is a matter of notoriety, but in this work the rest are completely surpassed. We may especially mention the three illustrations of the Ptarmigan as being actual *pictures*, and pictures that add to the already great reputation of the artist, Mr. Wolf. The adult plumage of *Archibuteo lagopus* has never before, we believe, been figured in any English work.

Mr. Gurney has, we are glad to say, commenced the publication of a Catalogue * of the almost unequalled collection of Birds of

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* A Descriptive Catalogue of the Raptorial Birds in the Norfolk and Norwich Museum, compiled and arranged by John Henry Gurney. Part I. *Serpentariidæ, Polyboridæ, Vulturidæ.* Royal 8vo., London: 1864 (Van Voorst).

Prey, which he has been so long and so industriously forming at Norwich. The portion which has appeared contains an enumeration of the different specimens of the three families, Serpent-eaters, Caracaras, and Vultures, therein exhibited, together with some well-compiled remarks on each species, either original or selected from the best authorities. The following tabular result will show the extraordinary wealth of the collection :—

	No. of species represented.	No. of specimens.	
		Skins.	Skeletons.
Serpentariidæ	3	17	2
Polyboridæ ...	8	26	3
Vulturidæ ...	19	98	11
Total	30	141	16

Of these 157 specimens, no less than 136 have the letter "G" affixed to them in the Catalogue, indicating that they have been presented to the museum by Mr. Gurney himself, whose munificence, we trust, is appreciated by the good people of Norfolk and Norwich, though we rather fear not to the extent it ought to be *.

The publications of the Zoological Society of London continue

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* We may as well add, from the Catalogues drawn up by Messrs. Cassin, G. R. Gray, Schlegel and Von Pelzeln, a comparative view of the same groups in the collections over which they respectively preside :—

	Serpentariidæ.		Polyboridæ.		Vulturidæ.	
	Species.	Skins.	Species.	Skins.	Species.	Skins.
Philadelphia, 1845?	—	—	—	—	16	70
London, 1848	2	6	7	31	16	74
Leyden, 1862.........	2	12	9	28	21	80
Vienna, 1862–63 ...	—	—	9	33	19	82

Of course, very great additions have been made, since the publication of the Catalogues, both to the British Museum and that of the Academy of Natural Sciences; and regard will also be had to the fact that very different ideas of the word "species" obtain, so as in some cases materially to affect the returns.

to be fully as important to ornithologists as ever. The 'Proceedings' are so well known and appreciated, that we scarcely need do more than allude to the single Part which has reached us during the past year. But the 'Transactions' contain, *in extenso,* Mr. Parker's valuable paper "On the Osteology of Gallinaceous Birds and Tinamous," in which he shows, we think satisfactorily, that this last-named group is the nearest ally of the *Struthiones*; at the same time we are far from considering that the *Tinamidæ* should be included among the Struthious birds, such a view, in our opinion, being forbidden by the presence in *Tinamus* of a furcula, a keeled entosternum, and the peculiar development of the hyposternal processes. We regret to say that the plates illustrating this remarkable paper are, with the exception of the few figures drawn by Mr. Parker himself, very inferiorly executed, being in most cases deficient in character, while the method adopted of figuring the whole skeleton in an upright and presumed natural posture effectually serves to conceal some of the most interesting portions of it. The letters also which should distinguish the different bones or parts of bones seem in some instances to be not sufficiently discriminative: thus we have, in Plate xxxv. fig. 6, '*e.s.*' signifying both entosternal and episternal processes, while this last, on the other hand, in Plate xxxix. is apparently indicated by '*e.p.*'

We have also to record the appearance of the first portion of the 'Ootheca Wolleyana' *, respecting which, for obvious reasons, we refrain from making any remarks. We may take this opportunity, however, of expressing our disappointment at having been obliged to delay the publication of the Second part of the work, which, notwithstanding, we hope shortly to accomplish.

2. GERMAN.

In noticing the last number of the 'Museum Heineanum' †, containing a portion of the *Picidæ* in the Oberamtmann Heine's rich collection, we have to declare our entire acquiescence in the remarks made by our predecessor (Ibis, 1864, p. 401) on the preceding Part. The care with which the catalogue is elaborated deserves all the praise that can be accorded to it; but we cannot but regard the very numerous new generic terms brought into use as mischievous in the highest degree. Could the learned authors be induced to restrain their "*furor genericus*" (as Dr. Hartlaub happily calls it), this work would be all we should wish to see it. The *Picidæ* we have here, are divided into *forty-eight genera, of which no less than thirty are indicated by names unknown before.* M. Malherbe, as some of our readers will recollect (Ibis, 1859, p. 458), was at the pains, not so very long ago, of renaming a large number of the sections—we must refuse to them the term genera—into which the Woodpeckers are separated; so that we cannot help thinking there has been altogether a great waste of the name-inventing faculty upon this group. Granting the principle on which HH. Cabanis and F. Heine act, the names are generally irreproachable in their composition; we must, however, say that some have rather an awkward sound—*Cactocraugus, Ipopatis,* and *Nannopipo,* for example. The *Picidæ* included in this *fasciculus* are divided into the subfamilies *Iunginæ, Picumninæ, Dendrocopinæ, Chrysoptilinæ, Chrysocolaptinæ,* and *Hemicercinæ.* The authors consider the type of the Linnean genus *Picus* to be *P. viridis.* It is confessedly a difficult point in most cases to settle which species is to be taken as the type of a Linnean genus, and here we should be sorry to pronounce authoritatively; but in this case we should, with Mr. George Gray, be rather inclined to retain *P. martius* for that post.

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* Ootheca Wolleyana: an illustrated Catalogue of the Collection of Birds' Eggs formed by the late John Wolley, Jun., M.A., F.Z.S. Edited from the original notes by Alfred Newton, M.A., F.L.S. Part I. *Accipitres.* Royal 8vo. London: 1864 (Van Voorst).

† Museum Heineanum, &c. von Dr. Jean Cabanis und Ferdinand

3. Dutch.

We have had the pleasure of receiving the Fifth part of Professor Schlegel's useful catalogue of the contents of the Leyden Museum *, comprising the groups *Sternæ, Cuculi, Psittaci,* and

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Heine. Theil IV, Klettervögel. Heft 2: Spechte. Halberstadt, 1863. (London, Williams and Norgate.)

* Muséum d'Histoire Naturelle des Pays-Bas. 5me Livraison. Leyde, 1864. London (Williams and Norgate).

the beginning of *Scolopaces*. Among the first-named he includes *Dromas ardeola*, following Mr. Blyth's opinion (Contrib. Ornith. 1852, p. 27, and Journ. As. Soc. Bengal, 1852, p. 12); we are glad to say, however, that he allows this strange form a genus to itself, though on a prior occasion he refused the like privilege to his "*Astur secretarius*," a bird differing from all Gos-Hawks quite as much as *Dromas* does from the Terns. Under the head *Cuculi* are contained the genera *Musophaga*, *Colius*, and *Opisthocomus*. According to Professor Schlegel's enumeration, we find that the Leyden Museum contains 1133 mounted specimens of 259 species of *Psittaci*, or more than two-thirds, we believe, of the whole number of the described species of this family, which Mr. G. R. Gray's Catalogue of 1859 put at 381, 280 being then represented by specimens in the British Museum.

4. DANISH.

Professor Reinhardt's paper on the occurrence of *Syrrhaptes paradoxus* in Denmark during 1863, mentioned in the article on the same subject which appeared in the former series of this Magazine (Ibis, 1864, p. 185), has been published in the 'Scientific Communications of the Natural History Union at Copenhagen'[*]. More cautious than some other ornithologists we know of, the Professor indulges in no speculations on the causes which brought about the singular visitation, but simply records the facts which came to his knowledge from trustworthy sources. Those of our friends who were at one time inclined to be sceptical as to the asserted breeding of this species in Europe, we hope, have had their doubts quieted long since. If not, we must refer them to Professor Reinhardt's own words; for there seems no need to repeat here the details which, thanks to that naturalist, were published in the 'Ibis' for the past year.

In the revived series of Kröyer's 'Natural History Journal,' our friend Herr Fischer, of Copenhagen, records the occurrence of that extremely rare bird, the Cuneate-tailed Gull, in the Færoes[†].

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[*] Om den kirgisiske Steppehönes Forekomst her i Landet i indeværende Aar. Af J. Reinhardt. Videnskabelige Meddelelser for 1863, pp. 213–235.

[†] *Larus Rossii* paa Færœerne. Ved J. C. H. Fischer. Naturhistorisk Tidsskrift, 3rd series, vol. iii. 1864.

The specimen was shot in Suderœ, 1st February 1863, was brought to Copenhagen by Sysselmand Müller, and now belongs to Herr Benzon, of that city. We take the present opportunity of observing that we are not assured of the existence of more than *five* examples of this species—the one just noticed: one (obtained, June 1823, at Alagnak, Melville Peninsula) in the University Museum, Edinburgh; one in the Derby Museum, Liverpool (possibly from Mr. Joseph Sabine's collection, and obtained at the same time and place as the preceding); one in the Museum at Mayence (brought, according to Dr. Bruch (Journ. f. Orn. 1855, p. 278), from Kamtschatka); one in Sir William Milner's collection at Nunappleton (said to have been killed in Yorkshire, according to one account, 22nd December, 1846 (Zool. p. 1694), but according to another (Zool. p. 1785, *note*) in February 1847); and one in Herr Gätke's collection, killed on Heligoland by his brother (Naumannia, 1858, p. 307; Ibis, 1862, p. 62). A sixth was recorded in 1852 by Mr. Ellman (Zool. p. 3388) as having been killed at Pevensey in Sussex, and being in his collection; but we have been kindly informed by Mr. Borrer, who saw and examined the specimen, that it was only an example of *Chrœcocephalus ridibundus* having "the breast very strongly tinged with pink."

5. SWEDISH AND NORWEGIAN.

The Fourteenth and Fifteenth parts of Professor Sundevall's 'Swedish Birds'* have made their appearance during the past year. The illustrator has fairly run away from the author, who is left high and dry among the land-birds, while the former is well at sea with the water-birds. But the Professor's work, if slow, is certainly sure, and there is no doubt he will in time make up his lee-way. We only hope we may live to see the book completed.

It is only lately we have been able to see Pastor Sommerfelt's list of the birds of East Finmark †, a communication which we are sorry we have not here space to comment upon as we think it deserves. Besides some others that are supposed to have occurred within the limits of the province, our author includes 140 species in his catalogue; but of these last some few seem to us to have been inserted on slender evidence. Independently of the importance which naturally attaches to the fauna of the most northern part of continental Europe, some of our countrymen may feel interested in the district, being one that was partially explored by the late Mr. John Wolley, whose authority is many times quoted by the author. Pastor Sommerfelt we are glad to see confirms a view we had long taken, namely, that HH. Malm and Schrader were somewhat precipitate in positively announcing that certain birds, particularly some of the rarer Waders, breed on the dismal peninsula which separates the Tana and Varanger Fjords. Though we cannot but congratulate our author on the promotion to a better living and a less inhospitable climate, which we understand he has lately obtained, we must still look upon the removal of the Gilbert White of the Arctic Circle as a loss to ornithology.

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* Svenska Foglarna, med text af Professor Carl J. Sundevall, tecknade och lithographierade af Peter Åkerlund. Stockholm. (London: Trübner and Co.)

† Fortegnelse over de i Ostfinnmarken iagttagne Fugle tilligemed en-

6. AMERICAN.

"Some Account of the Petrel"*, by the Rev. John Ambrose, contains a statement, rather remarkable perhaps, but one which we have no reason to think erroneous, that these birds dig their holes in the ground for themselves, using the bill for a pickaxe, and throwing the loose earth behind them very rapidly with their webbed and shovel-like feet, kicking with each foot alternately. Unfortunately the author does not say to which species of *Thalassidroma* the subject of his observations belongs. We believe that hitherto the mode of excavation adopted by the Petrels was only surmised: Mr. Ambrose seems to have seen it actually practised.

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kelte Bemærkninger angaaende endel af disse. Ved Chr. Sommerfelt, Sognepræst til Næsseby. Œfvers. af K. Vetensk. Akad. Förhandlingar, 1861, pp. 67–90.

* Transactions of the Nova Scotian Institute of Natural Science. Halifax, N.S., vol. ii. part 1. pp. 34-37.

To Mr. Lawrence we are indebted for copies of two papers published in the Philadelphia 'Proceedings' *, as well as one from the New York 'Annals' †. In the first are described *Vireosylvia atripennis* (from the little island of Sombrero, in the West Indies, said to resemble the well-known *V. altiloqua*, but to be a stouter species, and especially distinguished by its black quill-feathers), *Corethrura guatemalensis* (whose locality is shown by its specific name), and *Aramides axillaris*, from New Granada. The second of Mr. Lawrence's papers contains descriptions of *Dacnis ultramarina*, *Saltator intermedius*, and *Cassicus vitellinus*, all from the Isthmus of Panama, as well as of *Ereunetes occidentalis*, which appears to be the Pacific form of *E. pusillus*, and, among other characters, differs from that well-known bird in having larger and more decidedly marked spots on the breast, and a longer bill. Recent investigations have served to show that there is a good deal of difference observable between the *Scolopacidæ* of the two coasts of America; but, with the experience of Messrs. Swinhoe and Blyth (who have been most carefully and, we will say, with the best of good reasons uniting under one designation the bearers of very distinct names) before us, we would submit that some of these differences are hardly such as should be deemed specific. Mr. Lawrence's third paper contains diagnoses of seven new species, all Neotropical—three Tanagers, a Cuckoo (*Coccyzus julieni*, from Sombrero), and three Humming-birds.

With the greatest respect for the feelings which have prompted Mr. Cassin, we yet trust we may not be thought ill-natured, when we make a clean breast of it, and express our regret at hearing that there is "a very considerable number" of hitherto neglected authors, whose claims to public attention he is about to urge in a series of papers communicated to the Philadelphia Academy. The first number of the 'Fasti Ornithologiæ' ‡ has so recently reached us that we must be pardoned for now making upon it only the briefest remarks possible. According to Mr. Cassin's view, Prof. P. L. S. Müller's edition of Linnæus's 'Systema Naturæ,' published at Nuremberg between 1773 and 1776, will effect a very great revolution in our nomenclature, so much so that we think it expedient, in a future number of this Journal, to go thoroughly into the subject, and reprint from Mr. Cassin's list the names, conferred by Müller at this period, which will have to take precedence of the appellations of Boddaert even, and, of course, of later writers. We believe Müller's work to be extremely scarce,—at present we are not even aware whether a copy of it exists in this country; it will therefore be the more incumbent upon us to place our readers in possession of as much information about it as we can.

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* Proceedings of the Academy of Natural Sciences of Philadelphia, April 1863, pp. 106, 107, and April 1864, pp. 106–108.

† Annals of the Lyceum of Natural History, New York, vol. viii. June 1864.

‡ Fasti Ornithologiæ. By John Cassin. No. I. Philipp Ludwig Statius Müller. Proc. Acad. Nat. Sc. Philadelphia, October 1864.

XI.—*Letters, Extracts from Correspondence, Notices, &c.*

The following letters have been received:—addressed "To the Editor of the 'Ibis.'"

Tamsuy, Formosa, 11th August, 1864.

Sir,—" . . . . The bird-season closed here in June, and I have done little in that time. At Foochow I saw a pair of *Pericrocoti* that looked to me very like my *P. cantonensis* (Ibis, 1861, p. 42), though I should rather have expected *P. sordidus* so far north; I did not, however, procure specimens. My new *Hypsipetes niveiceps* [Ibis, 1864, p. 424], from Swatow, also occurs in the mountains near Foochow, as does also a Nuthatch. . . . . The young of *Alcippe brunnea*, Gould, like the young of *A. morrisonia*, mihi (Ibis, 1863, p. 296), resembles the adult, but wants the black streaks on either side of the hind neck.

A word on Cuckoos, and I have done for the present. The Cuckoo of the Tamsuy vicinity is a small species, a good deal smaller than *Cuculus kelungensis*, mihi (Ibis, 1863, p. 394), and mottled with black on the axillaries. It utters the notes "cooh-cooh" very abruptly, and usually when perched on the top of a conspicuous part of some tree. It is rather shy of approach. I have distinguished my specimens of it, for the present, as *C.*

tamsuicus. I have done with Tamsuy just now, and shall be off by the middle of the month to take up my station at Takow, whence you will hear from me so soon as I have anything special to report.

I am, &c.,

ROBERT SWINHOE.

In continuation of former extracts from Mr. Swinhoe's notes, we print the following:—

ACCIPITER VIRGATUS (Temm.).

Length 14·5 in.; wing 8·5 in.; 5th quill rather longer than 4th, and longest; 7th about ·15 shorter than 2nd; 6th about between 2nd and 3rd; 1st, 2nd, 3rd, and 4th deeply indented on inner web, the 4th the least and the 5th scarcely appreciably so. Tail 6·7 in.; rectrices broad, slightly narrowing towards their obtuse tips, little graduated, the outermost one being about $\frac{1}{4}$ inch shorter than the centrals. Tarse 2·5 in.; mid toe 1·7, its claw ·5. Inner toe shorter than the outer, but with its large claw nearly equal to the outer with its claw. Legs greenish yellow; yellower on the toes, which have orange soles; claws hooked, sharp, and black. Bill bluish at the base, dark at the tip and on culmen; *tomia* festooned deeply. Cere greenish yellow. Upper plumage deep brown; nearly black on the head, cheeks, and nape, and having black edges to many of the dorsals. Quills: 2nd to the 5th indented on their outer edge; all obscurely banded. Tail pale brown, with a tinge of yellowish grey, with four broad black transverse bands, the outer rectrices having six narrow lighter bands on the inner web, with a broad dark tip to each. All the feathers are patched with white on their inner webs at their bases. Throat white, with black median streaks to the feathers. Axillaries white, tinged with cream-colour, spotted and barred with black. Under wings more or less whitish, barred with blackish. A few black drops occur on the centre of the breast; but the greater part of that and the sides of the belly are yellowish brown, rather narrowly barred with white. Under tail-coverts white, with a few blackish bars. The rest of the under plumage brown, barred with white. Under tail pale, and more faintly barred than on upper surface. Under rachids of rectrices white. The brown of the upper parts has a gloss of purple in some lights. Front of tarse feathered for about $\frac{3}{4}$ inch.

The specimen from which the above note was taken was brought to me from the interior in May; it answers well to Jerdon's description of the female of *A. virgatus* (B. of India, vol. i. p. 52). *A. virgatus* has not hitherto been noted from Eastern Asia; but as it is stated to extend along the Archipelago to the Philippines, there is no reason why it should not also occur in Formosa. I saw a Sparrow-Hawk wheeling about, the other day, over a wooded valley. It looked very like an individual of this species; but I was not able to get a shot at it.

SULA SINICADVENA, Swinhoe.

In my China list, published in the 'Proceedings,' I have set down No. 404, *Sula fusca*, Shaw, as seen from Shanghai, and recorded in the 'Fauna Japonica' from Japan. The bird I saw while in England was in Mr. Whiteley's hands, and I was informed by Mr. Whiteley that the specimen was brought home together with some other Chinese birds, and that he felt sure it was Chinese. The evidence not being satisfactory, I entered the bird in my list on the faith of its having been noted in the 'Fauna Japonica.' But the other day a specimen having been captured on board a steamer between this port and Foochow, I have been induced to try and identify it correctly. My specimen tallies, as far as I recollect, entirely with the specimen seen in Mr. Whiteley's hands. What the Japanese bird is like I cannot say, as I do not think it is described in the 'Fauna Japonica'; or, if it were, I have not that work by me: the description does not occur in my extracts from it. I consequently refer to Blyth's 'Catalogue,' wherein (page 296) I find two species noted from the tropical seas, Bay of Bengal, &c., *Sula fiber* (L.) and *Sula piscator* (L.). In Bonaparte's 'Conspectus,' the former of these stands (vol. ii. p. 164) as *Dysporus sula* (L.), (*D. fiber* and *D. fusca* both being its synonyms), the latter as *Piscatrix candida* (Br.). The latter is expressly stated to be found in China, and in Van der Hoeven's 'Handbook of Zoology' (vol. ii. p. 387) is said "to be taught by the Chinese to catch fish." *S. piscatrix* may, for aught I know to the contrary, be a Chinese bird; but I believe in this country the *piscatorial* education is confined to the Cormorant. However that may be, the bird under consideration is by no means referable to that species. I supposed it before to be the true *S. fiber* vel *fusca*; but Bonaparte gives of that species, "*subtus a jugulo albus,*" while ours has the whole of the under neck and breast concolorous with the upper parts. I can hardly imagine that this species has so long escaped detection, but think it prudent to christen it afresh at the head of my description of it; and should it prove a previously described form, it will be easy enough for you to quash my name and substitute the proper one. Under the head of *Sula bassana,* Pallas (Zoograph. Rosso-Asiat. ii. p. 307) states that Gannets are most rarely met with on the coast of Siberia, and that "*in orientali Oceano Stellerus unica vice cum Cane Lagopo pugnantem cepit, in itinere vero Americano sæpius in Pelago volantem inter Procellarias vidit.*" This may, however, refer to several species. His description appears to be that of the true *S. bassana.*

Sula sinicadvena, ♂. Skin bare on forehead a little in front of and round the eye; the feathers advancing a little way under the eyes, and then receding and going round the throat in a gently festooned line. Bill along culmen to frontal feathers 4·5, to gape 5·4 in.; *gonys* to edge of gular feathers 5·15, alongside of lower *maxilla* to edge of feathers 5·8 in. Bill and face-skin pale yellow, deeper on the bare skin, plumbeous in front and round the eye. *Tomia* serrated; mouth smooth, without *papillæ,* plumbeous. Tongue nearly obsolete. Iris light pearly grey, blackening near pupil, with a black outer rim. Legs pale yellowish, with a slight tinge of green; claws light plumbeous, that of middle toe broadly pectinated. General plumage deep brown, with the under shafts of *remiges* and *rectrices* white. The under body, from the breast downwards, and under wing-coverts white, in parts with a smoky and brownish tinge, as if, when younger, the bird had been entirely brown. Length 31½ in.; wing 16 in.; 1st quill ·2 longer than 2nd, and longest in wing; tail 9 in., cuneate and acuminate, of 14 stiff feathers, each running to a point, two central longest, the rest much graduated. Tarse 1·9 in.; middle toe and claw 3·6 in.; toes all connected by membrane. The internal parts were much shrunk, as the bird had been kept several days without food; but the testes were large and well developed, and the specimen is to all appearance an adult male.

This species, if distinct from *S. fiber*, as Bonaparte's description would show it to be, must be the bird of Japan hitherto mistaken for that bird. Large numbers of a white-backed species were seen by me off the coast of Siam; they might have been *S. piscatrix*, but they looked to me more the size of *S. bassana*.

ROBERT SWINHOE.

Amoy, 5th October, 1864.

SIR,—On the 19th September a Pelican was shot and brought to me by the constable attached to this Consulate. The bird was all alone, and rather early in his arrival. He is of the species usually found in these waters during winter, with a short recurved crest; but by what term is this species known to science? *P. onocrotalus*, L., is given from India and Japan; and from the former place a smaller species is noted by Blyth as the *P. philippensis* (Gmel.), *P. roseus* (Gmel.), *P. manillensis* (Gmel.), *P. javanicus* (Horsf.). The smaller species Blyth subsequently identified with *P. crispus* (Bruch), which name is, I presume, of later date, and will have to sink into a synonym*. I took home with me no entire skin of this Pelican, and am therefore unable to speak with certainty whether ours is referable to the same species; but I should surmise that there are strong grounds for this conclusion.

PELECANUS PHILIPPENSIS (Gmel.). Total length, from tip of bill to end of tail, 4 feet; expanse 6 feet 9 inches. Wing, from carpal curve, 22½ inches; bill, along culmen, 13½; lower mandible 14½. Bill and gular pouch yellowish flesh-colour; irides ochreous; legs brown; general plumage cream-colour. Head and neck covered with small downy feathers of a light pearl-grey. Occipital crest-feathers about 1½ inch long, soft and acuminate, recurved. The plumage washed with a roseate hue, much deeper on the back. Many of the scapulars, upper tail-coverts, and wing-coverts brown on their stems. Primaries, winglet, and secondaries hair-brown, deepest on the two first; the last, for the most part, broadly margined with brownish cream-colour, of which colour the tertiaries and greater wing-coverts partake largely. Tail composed of sixteen broad, stiffish feathers, pointed at tip, with thick black stems, the laterals being somewhat incurved. Length of tail 7½ inches from root to tip of central feathers; the extreme lateral 2¼ inches shorter than the central, the rest graduated, giving a rounded form to the tail when expanded. Most of the rectrices are cream-colour; but some have a strong admixture of brown, showing that the bird is not quite mature. In full plumage, I opine, the whole tail, with the exception of the dark stems, would be cream-colour, as also the entire wing-coverts and tertiaries. Under parts white, washed with fine roseate. The cere, *supercilium*, and beyond the eye bare; the skin-line rounding towards the angle of the mouth, retiring in a semicircle on the basal side of the lower mandible, advancing again below it, and then retiring and keeping well clear of the throat, which is connected with the gaping *crura* by a deep loose skin up to their apical junction. The *crura* terminate in a *dertrum* opposite to the hooked *dertrum* that terminates the culmen. The *lines* of the upper mandible are narrow at starting, then, expanding into a spatula, gradually contract to the tip. This mandible is rounded at its sides for about one-third of its length, and then flattens into a *spatula*, its greatest breadth being 1½ inch, its least breadth 1 in., and the culmen on either side is distinctly grooved; nostrils indistinct, and covered with a membrane. Hind toe lateral; all the toes connected by a membrane. No *pecten* on the middle claw. Tibia bare for about 1 inch; tarse 3½ in. long; middle toe and claw 5¼ in., hind toe and claw 2¼ in. The weather being hot at the time, the body became putrid, and was thrown away; I was therefore, I regret to say, unable to determine the sex of the specimen, or to note any anatomical details.

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* We doubt whether this will be the case, the true *P. crispus* being one of the largest species.—ED.

I am told that a large number of Gallinaceous birds have been forwarded alive to the Acclimatization Society at Paris from Pekin; among others, several specimens of *Crossoptilon* and some beautiful kinds of Pheasants. They went by the "Messageries Impériales"; so you will probably have heard of them before this reaches you.

I am, &c.,
ROBERT SWINHOE.

5 Peel Terrace, Brighton,
Nov. 25, 1864.

Sir,—On the 2nd of this month a boy brought to Mr. Swaysland, the naturalist in this place, a very small bird of an unknown species, which he had just caught outside the town. Mr. Swaysland immediately sent for me; and I carefully examined it alive to discover, if possible, any signs of captivity. The edges of the feathers and the top of the head were perfect; and, above all, there were no square marks on the feet, such as are caused by the perch of a cage. These indications being all satisfactory, I concluded that we had a wild bird before us, and a short investigation made it pretty clear that the species was the *Emberiza pusilla* of Pallas.

I then wrote to Mr. Gould, who kindly undertook to exhibit it at the meeting of the Zoological Society on November 8th, and he has since drawn its portrait for his magnificent book on British birds.

On the 30th September, this year, another living example of the Tawny Pipit (*Anthus rufescens*), caught near Brighton, was brought alive to Mr. Swaysland, who showed it me at once. This is the third I have seen: the two former ones were mentioned in the 'Ibis' (1863, pp. 37, 38); and I consider this Pipit now takes rank as a British bird, which *Emberiza pusilla* can as yet be hardly said to do. I remain, &c.,

George Dawson Rowley.

Sir,—During the greater part of the month of September a pair of Ospreys (*Pandion haliæetus*) frequented the large reservoirs of the Paddington Canal at Wilstone, Herts, and Marworth, Bucks, two villages immediately adjoining my own parish. They were very fearless and tame, catching fish whilst persons were standing close by. Their sociable habits, alas! proved fatal to them; for, on the 30th September, the female bird was killed while in the act of eating a fish. It was sent to a village bird-stuffer, who unfortunately laid it on the floor of an outhouse. A rat got in during the night, and terribly mutilated the head. It was not till after this occurred that I heard of the bird having been killed. Its owner, as soon as he heard of the interest I felt in the subject, most kindly gave me the skin, which is now in the hands of Mr. Cooke, of Derby, who will, I hope, be able to repair the damage. The specimen is otherwise a very fine one, and seems to be a last year's bird.

The male bird continued in the neighbourhood for a short time after the female was shot, but then disappeared. Mr. Gould informs me that about this time a male Osprey was killed on the Thames, near Maidenhead, which, I think with him, must have been the mate of my bird. In 1863 another specimen was killed at Halton, a small village about three miles hence. It was sitting on the towing-path of the canal, engaged in devouring the body of a pigeon which had been thrown out of an adjoining dove-cote. It was stuffed, and is in the possession of Sir Anthony de Rothschild.

On the 4th of June, as my sisters and myself were walking on a rough hilly down in this parish, we disturbed a Cirl Bunting (*Emberiza cirlus*) from her nest, containing three eggs, in a wild juniper-bush. I have several times seen the male of this species in this parish, and I have twice had specimens brought me from the adjoining parish of Pitstone, Bucks. I am inclined to think it breeds here regularly, and is far more common than is generally supposed. I am, &c.,

H. Harpur Crewe.

The Rectory, Drayton-Beauchamp, Tring,
Nov. 28, 1864.

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26 Charlotte Street, Bedford Square,
December 1864.

Sir,—The Messrs. Pratt, taxidermists, of 44 Ship Street, Brighton, have kindly forwarded for my inspection a very fine example of a Rock-Pipit, which differs so remarkably from our well-known species, *Anthus obscurus*, that I have but little hesitation in considering it distinct, and still less in referring it to the *Anthus spinoletta* of Continental authors, of which *A. montanus* is regarded as a synonym. Independently of the example mentioned, the Bishop of Oxford has submitted to me a second specimen from the same source. Both these individuals were doubtless mounted from the flesh of birds recently killed on our south coast. The following is a copy of the note received from Mr. Pratt, respecting the individuals in question:—

"44 Ship Street, Brighton,
"December 1864.

"Dear Sir,—Mr. Jeffreys informed me, last evening, that you would like to see a specimen of our Water-Pipits. We beg therefore to forward by rail to you the remaining specimen; the other the Bishop of Oxford has taken to London to be examined: unfortunately we cannot give the date of capture of either of the specimens. The one we send was received from another naturalist, who obtained it near Worthing; the other was killed by a young gentleman near here, and given to us in the flesh.

"With respect, &c.,
"John Pratt."

This brief notice may induce those who take an interest in our native birds, and who may be favourably located, to look more closely into the subject of these Rock- or Shore-Pipits, as in all probability the present bird occurs more frequently in our island than we are aware of. The *A. spinoletta* and *A. obscurus* are of about the same size; but the former may be readily distinguished from the latter by the vinous colouring of its throat and breast, and by the under surface being totally devoid of spots or markings, and by having in all stages, I believe, the outer tail-feathers white or nearly so, while in *A. obscurus* they are clouded with grey and brown.

I am, Sir, yours obediently,
John Gould.

Mr. John Pratt has himself communicated a note, on the subject of these specimens, to the 'Zoologist' for October last (Zool. p. 9279). We believe, however, he is in error in supposing his to be "the first recorded occurrence of this species in our country." Nearly twenty years since, Mr. Thomas Webster, of Manchester, mentioned in the same periodical (Zool. p. 1023) his having observed three birds at Fleetwood, in October 1843, which he had "not the slightest hesitation" in identifying with a Pipit described by M. Deby (Zool. p. 980) as "*Anthus aquaticus*, Bechst.," and which, to all appearance, were totally distinct from the common Rock-Pipit of our coasts (*A. obscurus*). Mr. John Hancock also has had the goodness to inform us that he has in his collection a specimen of a Pipit obtained in this country, which, he is inclined to believe, differs from *A. obscurus*. We hope in our next Number to receive some additional information which may assist in clearing up the confusion still existing about the European species of Rock-Pipits, one at least of which, from the great seasonal change of plumage it appears to undergo, is rather a puzzling bird.

The following is an extract from a letter recently addressed by Mr. John Cassin, of the Academy of Natural Sciences, of Philadelphia, U. S. A., to Mr. P. L. Sclater, F.R.S :—

"The Academy of Natural Sciences had presented to it, some thirty years since, the engraved copper-plates of Vieillot's 'Oiseaux de l'Amérique Septentrionale' and of Audebert and Vieillot's 'Oiseaux Dorés,' with a large collection of books and of objects, like these plates, of only incidental interest and scientific value. These plates having remained in possession of the Academy for that considerable period, without having been used for any purpose, I have been authorized to sell them at the price here of refuse or old copper. My aversion to their destruction I cannot overcome, however unreasonable it may be; and I write to you in relation to them, hoping that, if a notice is inserted in the 'Ibis,' a purchaser may be possibly found, who will preserve them, or to whom they may be useful. Of the 'Oiseaux Dorés' there are many plates, as the work was printed in colours: frequently several copper-plates were used in printing one bird. The plates of both works are believed to be complete, though I have never critically examined them, nor compared them with the published work. They are, apparently, in entirely good condition."

Those who take an interest in the history of *Alca impennis* may like to know that, among a set of birds' bones from a place of ancient interment on the coast of Caithness, which has been lately submitted to Professor Owen by Mr. Carter Blake, some remains of this species have been identified, namely, the end of a *premaxillare* as far as the nostril, a right and left *humerus*, and a right and left *tibia*. Professor Busk also, if we are rightly informed, has himself found a portion of a skeleton of this bird in a "kitchen-midden" in the northern part of the kingdom, which he has deposited in the Museum of the Royal College of Surgeons. The National Collection, too, has lately received from Mr. J. M. Jones, of Halifax, N. S., an almost perfect skeleton of this bird. The specimen was found on Funk Island, off the north-east coast of Newfoundland, under the same circumstances as the one exhibited in November 1863 to the Zoological Society (P. Z. S. 1863, pp. 435–438). We learn from the Bishop of Newfoundland that all the peat-soil has now been removed from that island; so that future investigators into the Northern Penguin's history will no longer reap a harvest in that locality. We understand that two more of these natural "mummies" have been saved, and sent to Professor Agassiz.

We are glad to hear that Mr. E. Bartlett—son of the well-known Superintendent of the Zoological Gardens—who accompanied Mr. Tristram's expedition to the Holy Land in the capacity of working-zoologist, is about to start for the River Amazons, where he intends to remain for some time. The frightful disaster which befell Mr. Wallace on his return from those regions, effecting the complete destruction of all his valuable collections —treasures amassed during years of hard work—makes it extremely desirable that this part of South America should be visited by a competent ornithologist, the more so seeing that the sympathies of Mr. Bates were so much occupied by beetles and butterflies, that he would have been more than human had he been able to devote much time to birds. We look forward with the greatest interest to Mr. Bartlett's proceedings, and hope that in his arduous undertaking he will receive every encouragement.

Dr. Elliott Coues, whose discriminating papers on several groups of North American birds are well known to many of our readers, has been recently stationed by his Government at

Fort Whipple in Arizona—"a month's journey from anywhere." We trust that the sojourn in the wilderness of this pains-taking naturalist may be productive of very great good to ornithology. He writes to us full of enthusiasm on account of the grand field of research that lies around him. He tells us of a new species of *Spizella*, "very like *S. socialis*, but smaller, with a much longer tail, and a very dark ash-coloured breast as in *S. atrigularis*, but wanting the *gula atra* of that species, and otherwise differing from it."

We have great pleasure in mentioning that, among the works announced as preparing for publication by the Ray Society, is a translation of Nitzsch's learned work on 'Pterylographie,' which has hitherto remained a sealed book to almost all English ornithologists. When we consider that herpetologists draw some of their best characters for the classification of reptiles from the arrangement of the scales, it is surprising that the importance of the arrangement of the feathers in birds should have been so long disregarded. We understand that the Society has been so fortunate as to become possessed of the original plates which illustrated this work, and that being in unimpaired condition, they will be used for the translation, an advantage which is as real as it was unexpected. The preparation of this book is entrusted to Mr. P. L. Sclater, so that nothing more need be said to recommend it. We have only to add that the Society's Secretary is Mr. H. T. Stainton, of Mountsfield, Lewisham, who will no doubt be happy to receive the names and subscriptions of such of our readers as are desirous of possessing this most important work.

We regret to see, by a notice in a late number of the 'Journal für Ornithologie,' that Pastor C. L. Brehm, author of so many works on ornithology, and, we believe, the oldest ornithologist in Europe, died on the 23rd June last, at Renthendorf, in Saxony. Dr. Baldamus promises us a memoir of the deceased naturalist, whose labours, whether for good or evil, certainly deserve such an acknowledgment.

THE IBIS.

NEW SERIES.

No. II. APRIL 1865.

XII.—*On the Distribution of Birds in Great Britain during the Nesting-season.* By A. G. More, F.L.S.

[Part II. Continued from page 27.]

Parus major (*Linn.*). Great Titmouse.
Provinces I.–XVII.
Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

Rare in the north of Scotland, but marked by Mr. Dunbar as building regularly in Ross and Sutherland. Sir W. Jardine describes it as ranging scarcely so far north as the Blue Titmouse.

Parus cæruleus (*Linn.*). Blue Titmouse.
Provinces I.–XVII.
Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

To Sutherland (*Mr. Selby* and *Mr. Dunbar*) and Caithness (*Mr. Dunbar*).

Parus cristatus (*Linn.*). Crested Titmouse.
Provinces XIII.? XV. XVII.
Subprovinces 27 ?, 31, 34.
Lat. 56°–58°. "Scottish" type. Not in Ireland.

From Sir W. Jardine we learn that the Crested Titmouse annually breeds in some plantations near Glasgow: this locality may belong to province XVI. and subprovince 32, instead of XIII. and 27 as entered above.

The Rev. George Gordon tells me that it breeds at Abernethy, on the Spey; and Mr. Dunbar describes it as plentiful in the woods of Castle Grant, in Inverness-shire; Montagu had already seen it from the forest of Glenmoor,—all three localities being situated close together on the confines of the counties of Inverness, Elgin, and perhaps extending to Aberdeenshire and Banff. Further north the bird has been seen on the Findhorn, and it nests regularly in Ross-shire (*Mr. W. Dunbar*).

Yarrell mentions that the Crested Titmouse has been seen in the Pass of Killiekrankie; and Macgillivray notices a specimen killed in Argyleshire.

PARUS ATER (*Linn.*). Coal-Titmouse.

Provinces I.–XVII.
Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

Mr. Dunbar finds the nest as far north as Sutherland. The late Mr. St. John also noticed the bird in the same county; and Macgillivray describes it as plentiful in the pine-forests of the north of Scotland.

PARUS PALUSTRIS (*Linn.*). Marsh-Titmouse.

Provinces I.–XII. XIV. XV.
Subprovinces 1–25, 28, 29, 30.
Lat. 50°–58°. "English" type, or Southern.

Throughout England and Wales, becoming scarce in Scotland, where it is mostly found in the Lothians. Nests regularly in Haddington (*Mr. A. Hepburn*), regularly in Linlithgow (*Mr. T. D. Weir*), and occasionally in several other counties of subprovince 28. The Marsh-Titmouse extends to Fifeshire, according to Macgillivray, and breeds in Perthshire (*Mr. A. Pullar* and *Mr. J. Lamb*), occasionally in Aberdeenshire (*Mr. T. Edward*), and even as far north as Inverness (*Mr. W. Dunbar*). This bird can hardly be supposed wanting in subprovinces 16 and 19, though it is not included in either list of the nesting-birds of Lincolnshire, where Mr. Adrian informs me that it has only been noticed as a rare visitor.

PARUS CAUDATUS (*Linn.*). Long-tailed Titmouse.
Provinces I.–XVII.
Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

Less frequent in the north of Scotland, but is described by Mr. Dunbar as nesting regularly in Ross, Sutherland, and Caithness. Sir W. Jardine considers that it does not reach nearly so far north as the Coal-Titmouse.

PAROIDES BIARMICUS (*G. R. Gray*). Bearded Titmouse.
Provinces [II.] III. IV. [V.] [VIII.] [IX.] [X.]
Subprovinces (6), 7, 8 ?, 10, 11, 12, (13 ?), 19, (21 ?), 23.
Lat. 50°–53°. "Germanic" type. Not in Ireland.

A very local species, apparently now restricted to a few localities in Norfolk and Suffolk, and to the reed-beds along the banks of the Thames. Still breeds in Surrey (*Rev. J. C. Atkinson*) and probably in Essex (where the bird has been noticed), in East Suffolk (*Rev. J. Farr*), in Norfolk (*Mr. H. Stevenson*), and possibly in Lincolnshire, which is one of the five counties mentioned by Hewitson. (See also Mr. J. D. Hoy's account of this bird, in Loudon's 'Mag. of Nat. Hist.' vol. iii. p. 328.)

Extinct in Sussex (*Mr. Knox*); extinct also in Cambridgeshire and Huntingdon (*Mr. F. Bond*).

Kent, Gloucester, and Cowbit in Lancashire are given as localities by Montagu; and Mr. Waterton tells me that a pair once built by the side of the lake at Walton Hall.

MOTACILLA YARRELLI (*Gould*). Pied Wagtail.
Provinces I.–XVIII.
Subprovinces 1–37.
Lat. 45°–60°. "British" type, or general.

Throughout the mainland, extending to the Outer Hebrides (*Dr. D. Dewar*) and Orkney; but does not breed in Shetland.

Blasius considers the Pied Wagtail a local race of the next species.

Motacilla alba (*Linn.*). White Wagtail.

Provinces I. ? II. ? III. ? IV. ?
Subprovinces 2 ?, 5 ?, 6 ?, 7 ?, 12 ?
Lat. 50°–53° ?. "English" type. Not in Ireland.

The Rev. M. A. Mathews considers the White Wagtail a regular spring visitor to the coast of North Devon, and has noticed a pair frequenting the banks of a stream near Barnstaple. He also writes that, in June 1860, his friend Mr. Brodrick, who knows the bird well, found a pair of White Wagtails nesting in a wall bordering on a little stream between Ilfracombe and Morte.

At Freshwater, in the Isle of Wight, Mr. H. Rogers has obtained a pair of Wagtails, with their nest, which Mr. Bond and Mr. Gould refer to *M. alba,* though the birds are not so pale in colour as usual.

With regard to Sussex, Mr. Swaysland has informed the Rev. M. A. Mathews that the White Wagtail is a regular summer visitant to the south downs, and then frequents the little pools on the high grounds, in the vicinity of which it is believed to breed.

Dr. Plomley told the Rev. H. Roundell that *M. alba* was a regular summer visitor, and bred in Kent. In the 'Zoologist,' p. 1497, Dr. Plomley describes it as common about Romney Marsh.

Mr. Charles Gordon has no doubt of its breeding in the cliffs of Kent, where he has noticed it during the breeding-season; and, from the clamour and actions of birds which he has shot there, he has no doubt there was a nest. To this may be added Mr. Carter's statement that he has caught the female upon the nest at Whittlesea (Hunts), where he saw the birds in great numbers for two successive summers (Hewitson, 'Eggs of B. B.' ed. 3. p. 165).

Motacilla sulphurea (*Bechst.*). Grey Wagtail.

Provinces I. II. III. V. VIII.–XVII.

Subprovinces 1, 2, 3, 4, 5, 7, 9, 13, 14, 15, 20–32, 34, 35.
Lat. 50°–59°. "Scottish" type, or Northern.

Scarce in the south during summer, and then found mostly in the west. Breeds occasionally in Cornwall (*Mr. E. H. Rodd*); regularly in North Devon (*Rev. M. A. Mathews*), in South Devon (*Mr. J. Gatcombe*), near Herringston in Dorset (*Mr. H. Groves*), at Chemies (*Gould*, 'Contrib. to Ornith.' 1849, p. 137), and by the little river Chess (*Rev. B. Burgess*), in Bucks and in Gloucester, where it is rare (*Rev. F. J. Scott*). Is believed to breed also in Somerset, Wilts, Hants, and Kent (as mentioned by Yarrell). Breeds more numerously in Stafford and Shropshire, and from Derbyshire northwards throughout Scotland, though considered by Macgillivray very rare north of Inverness.

Doubtless nidifies in South and North Wales, though I have no record of its doing so.

MOTACILLA CAMPESTRIS (*Pall.*). Ray's Wagtail.
Provinces I.–XVI. or XVII.
Subprovinces 2–28, 30, 31, 32, 35?
Lat. 50°–58° or 59°?. "English" type, or Southern.

Throughout England and Wales, becoming very scarce or local in the north of Scotland. Mr. T. Edward finds it breeding on the east coast of Aberdeenshire; and Mr. W. M. Snowie marks it as nesting also in East Inverness. Mr. R. Gray has found the nest in Dumbartonshire; and the bird has been seen as far north as Sutherland, by Mr. St. John and Sir W. Jardine, &c.

Obs.—Motacilla flava, L., whose nest is supposed to have been found in Cambridgeshire, is not included in the list which Mr. Bond has sent me for that county.

ANTHUS ARBOREUS (*Bechst.*). Tree-Pipit.
Provinces I.–XVI.
Subprovinces 1–28, 29, 30, 31, 32.
Lat. 50°–58°. "English" type. Not in Ireland.

Scarce in Cornwall, Wales, and Scotland, though the nest has been found as far north as Dumbarton (*Mr. R. Gray*), in Aberdeen and Banff (*Mr. T. Edward*), and in East Inverness (*Mr. W. Dunbar*).

Anthus pratensis (*Bechst.*). Meadow-Pipit.

Provinces I.–XVIII.
Subprovinces 1–38.
Lat. 50°–61°. "British" type, or general.

A common bird throughout Britain; especially abundant in the north, and reaching the Outer Hebrides and Shetland.

Anthus obscurus (*Keysl. & Blas.*). Rock-Pipit.

Provinces I. II. III. VI.–XVIII.
Subprovinces 1–7, 17–19, 21, 22, 24–38.
Lat. 50°–61°. "British" type, or general.

All round the coast, preferring rocky shores, but frequenting also the muddy estuaries of the flatter parts of the coast.

Alauda arvensis (*Linn.*). Sky-Lark.

Provinces I.–XVIII.
Subprovinces 1–38.
Lat. 50°–61°. "British" type, or general.

To the extreme north of Scotland and its isles.

Alauda arborea (*Linn.*). Wood-Lark.

Provinces I.–VI. VIII.–X. XII.
Subprovinces 1, 2, 3, 4, 5–11, 12, 13–15, 17, 18, 19 ?, 20, 21, 22, 23, 25.
Lat. 50°–55°. "English" type. Not in Scotland.

Chiefly in the south of England, and apparently rare or wanting in some of the eastern counties. Nests only occasionally in Essex, and is not included in either of the lists which I have received from Lincolnshire, though the county is mentioned by Yarrell.

Nests occasionally in Derbyshire, in Yorkshire (where it is rare), in South Lancashire (*Mr. G. S. Gregson*), and in Westmoreland (*Mr. T. Gough*).

Plectrophanes nivalis (*Meyer*). Snow-Bunting.

Provinces XV. XVIII.
Subprovinces 30 and 38.

Lat. 57°–61°. "Highland" or mountain type. Not in Ireland.

In the 'Natural History of Deeside' it is recorded that the Snow-Bunting has been noticed (by Macgillivray), early in August, on Lochnagar, Cairn-tual, and Ben-mac-dhui. In the same work, Messrs. Cumming and Brown state that it resides on these mountains all summer, and breeds; and Mr. Stewart says that it breeds on Ben Aun. In Banffshire, also, Mr. T. Edward has seen the Snow-Bunting in summer (Zoologist, p. 6597). Reference may be made to the first volume of Macgillivray's 'British Birds,' and to Yarrell, who quotes Colonel Thornton as having seen "Snow-flakes" on a Ptarmigan-mountain on the 29th of August.

Quite recently Dr. Saxby has discovered the nest of the Snow-Bunting in Unst, Shetland ('Zoologist,' p. 7709); and he tells me that he has upon many occasions observed pairs of them during summer, but in parts of the cliffs almost always inaccessible (see also 'Zoologist' for 1863, p. 8680, and 1864, p. 9237). In the latter passage Dr. Saxby considers that the Snow-Bunting breeds regularly in the cliffs below Saxavord.

EMBERIZA MILIARIA (*Linn.*). Common Bunting.
Provinces I.–XVIII.
Subprovinces 1–38.
Lat. 50°–61°. "British" type, or general.

Less numerous in Scotland, being attached to the corn-fields and cultivated districts, but reaches to the Outer Hebrides, Orkney, and Shetland.

EMBERIZA SCHŒNICLUS (*Linn.*). Reed-Bunting.
Provinces I.–XVIII.
Subprovinces 1–36, 37.
Lat. 50°–59° or 60°. "British" type, or general.

Once observed breeding in Orkney, according to Messrs. Baikie and Heddle.

EMBERIZA CITRINELLA (*Linn.*). Yellow Hammer.
Provinces I.–XVIII.

Subprovinces 1–35, 37.
Lat. 50°–59° or 60°. "British" type, or general.

To the far north of Scotland, and has twice bred in Orkney (*Messrs. Baikie* and *Heddle*).

EMBERIZA CIRLUS (*Linn.*). Cirl-Bunting.
Provinces I. II. III. V.
Subprovinces 1–6, 7, 13, 14.
Lat. 50°–55°. "English" (or "Atlantic") type. Not in Ireland.

Along the south coast, from Cornwall to Essex; but does not appear to breed in Kent.

Nests occasionally in Surrey (*Mr. F. Godman*). Has been seen in Herts, in May, by the Rev. H. H. Crewe, who has lately found it breeding near Tring (Ibis, 1865, p. 114). It has been obtained in Berks by the Rev. F. O. Morris. Breeds in Gloucester (*Rev. F. J. Scott*), in Hereford (*Mr. R. M. Lingwood*), in Worcester and Warwick (*Mr. R. F. Tomes*). The few birds which have been noticed further north were most likely accidental visitors.

FRINGILLA CŒLEBS (*Linn.*). Chaffinch.
Provinces I.–XVII.
Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

The commonest and probably most abundant of our Finches; nesting regularly as far north as Caithness, but appears only as a visitor in the northern Scottish isles.

Obs.—*F. montifringilla* (L.). In the 'Zoologist' for 1864 (p. 9210), the Rev. J. C. Atkinson describes a nest and eggs found near Thirsk, which he supposes to have been those of the Brambling—a bird which in Western Scandinavia does not breed south of lat. 59° N., and in Eastern Scandinavia not south of lat. 67° N. (*Wallengren* in 'Naumannia,' 1855, p. 136).

PASSER MONTANUS (*Steph.*). Tree-Sparrow.
Provinces I.–V. VIII.–XI. XIV. XV.
Subprovinces 3, 4, 6, 7, 8, 9–15, 19, 20–24, 28, 29, 30, 31.
Lat. 50°–58°. "Germanic" type. Not in Ireland.

Chiefly in the middle and eastern counties of England, reaching as far north as Lancashire and Cumberland, with a few scattered localities on the eastern side of Scotland.

Mr. W. D. Crotch has once taken the nest, and caught the hen, in a hole in a thatched roof near Taunton. In Dorset, Mr. H. Groves has found the nest in a tree in a swamp at the mouth of the river Wey.

The Tree Sparrow breeds regularly in Gloucester, Hereford, Stafford, Shropshire, where "it is common" (*Mr. H. Shaw*). Mr. C. S. Gregson considers it not scarce in South and North Lancashire; and he tells me that he has taken the nest near Warrington and near Lancaster, and believes that its range extends to Westmoreland and Cumberland.

Extremely rare in Scotland. Mr. R. Gray has noticed a pair frequenting a farm in North Berwick all the summer; Mr. J. R. Pencaitland also marks it as nesting occasionally in this county. Mr. J. Murray and Mr. A. Pullen tell me that it breeds occasionally in Perthshire. Mr. T. Edward has seen eggs which were taken in "the higher parts of Aberdeenshire"; and, in Elginshire, the Rev. George Gordon finds the Tree-Sparrow breeding annually in small numbers in the hedges of the warmer parts of the county, where it appears as a summer visitor.

PASSER DOMESTICUS (*Leach*). House-Sparrow.

Provinces I.–XVIII.
Subprovinces 1–38.
Lat. 50°–61°. "British" type, or general.

Throughout Great Britain, extending to the western and northern isles of Scotland.

FRINGILLA CHLORIS (*Temm.*). Green Linnet.

Provinces I.–XVII.
Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

Breeds as far north as Sutherland (*Mr. W. Dunbar*) and Caithness (*Mr. H. Osborne*), but not in the Scottish isles.

Coccothraustes vulgaris (*Steph.*). Hawfinch.
Provinces II. III. IV. V. VIII. X.
Subprovinces 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 20, 23.
Lat. 50°–54°. "English" type. Not in Ireland.

Apparently increasing, and reported as now breeding regularly in Wilts, Kent, Surrey, Essex, Middlesex, and Bucks. The nest has also been found in Dorset (*Mr. H. Groves*), Hants, Sussex, Herts, Berks, Oxford, Suffolk, Norfolk, Warwick, Rutland, Derby; and at Cusworth near Doncaster (*Mr. H. Reid*).

Mr. T. Edward informs me that he believes a pair bred, a few years ago, near to the town of Banff.

Fringilla carduelis (*Linn.*). Goldfinch.
Provinces I.–XVII.
Subprovinces 1–34, 35.
Lat. 50°–59°. "British" type, or general.

Rare in the north of Scotland, though reputed to breed regularly in Ross-shire (*Mr. Danford*) and occasionally in Caithness (*Mr. H. Osborne*); the late Mr. St. John also observed the bird in Sutherland.

The Goldfinch is said to be decreasing in several of the northern districts; and if we look to the account given by Mr. Knox of the great numbers annually destroyed by birdcatchers in the autumnal migration, there can be no doubt that the Goldfinch and many other of the Finches and Linnets are destroyed in a most reckless and unprofitable manner. Without wishing for protective laws like those enacted in France, we cannot avoid registering this protest against the cruel and useless slaughter which Mr. Knox deplores, in his 'Ornithological Rambles' (ed. 3, p. 78).

Fringilla spinus (*Linn.*). Siskin.
Provinces II. III. IX. X. XI. XII. XIII. XXII.
Subprovinces 4, 7, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 34, 35.
Lat. 50° or 54°–59°. "Scottish" type. Not positively known to breed in Ireland (Zool. p. 3708).

The Rev. O. Pickard-Cambridge tells me that he once found a

Siskin's nest in a furze-bush, close to a fir-plantation, near to Bloxworth, Dorset. Meyer mentions a nest taken in Combe Wood. The bird is considered to have bred near Oxford (*Rev. A. Mathews*), and has been seen near Gloucester in the month of May.

The nest has been found in Lancashire (*Yarrell*), near Walton Hall (*Mr. Charles Waterton*), in Durham (*Mr. J. Hancock* and *Rev. H. B. Tristram*) and in Westmoreland, according to Bolton, as quoted by Montagu.

In the south of Scotland, the Siskin breeds occasionally in Dalswinton Woods, Dumfriesshire (*Mr. W. G. Gibson*); in Kirkcudbright (*Yarrell*); within two miles of Glasgow (*Mr. R. Gray*); in several counties of subprovince 28; in Perthshire, perhaps regularly; in Argyleshire; and, though not numerous as a species, may be considered to nest regularly in most of the northern counties of Scotland.

FRINGILLA CANNABINA (*Linn.*). Linnet.

Provinces I.–XVIII.

Subprovinces 1–35, 37.

Lat. 50°–60°. "British" type, or general.

Throughout the mainland; and also breeds regularly in Orkney (*Messrs. Baikie* and *Heddle* and *J. H. Dunn*).

FRINGILLA LINARIA (*Linn.*)*. Lesser Redpoll.

Provinces II. III. IV. V. VIII.–XVIII.

Subprovinces 4, 5, 7, 9, 10, 11, 13, 14, 15, 20–31, 32, 34, 35, 37.

Lat. 50°–60°. "Scottish" type, or Northern.

Nests occasionally in Dorset, Isle of Wight, Kent (Zoologist, p. 8951), Oxford, Warwick, and Shropshire; regularly in Norfolk and Suffolk; regularly in Nottingham (*Rev. R. Sutton*) and Derby (*Rev. H. H. Crewe* and *Mr. O. Salvin*), and thence northwards becomes more numerous, breeding in all the counties of the north of England and throughout Scotland. Low tells us that it breeds in Hoy; and Messrs. Baikie and Heddle also describe it as indigenous to Orkney.

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* We think there can be no doubt that the true *Fringilla linaria* of Linnæus is the bird usually called by English ornithologists the "Mealy Redpoll"; the specific name proper to the "Lesser Redpoll" would seem to be *rufescens*, Vieillot.—ED.

FRINGILLA FLAVIROSTRIS (*Linn.*). Twite.
Provinces V. VII. VIII. IX. X.–XVIII.
Subprovinces 14, 15, 18, 20, 21–25, 27–32, 33 ?, 34–38.
Lat. 50°–61°. "Scottish" type, or Northern.

In Herefordshire, Mr. R. M. Lingwood says that the Twite breeds sparingly on the Black Mountains, or Hatterell Hills, on the west border of the county.

Garner tells us that this bird breeds in Staffordshire; and Sir John Crewe marks it as nesting regularly in that county. Mr. H. Shaw describes it as nesting occasionally on the Longmind Hills, in Shropshire. The bird also breeds in Derbyshire occasionally (*Sir J. Crewe*), in North Wales (*Eyton*), on the mosses of South Lancashire, Warrington, &c. (*Mr. C. S. Gregson*); in East York (*Mr. A. S. Bell*); in West York (*Mr. H. Smurthwaite*); Westmoreland (*Mr. T. Gough*); Isle of Man (*Mr. J. F. Crellin*), who has kindly sent me specimens of the bird, obtained in the month of June; in Durham and Northumberland, and in nearly all the counties of Scotland, reaching to the Hebrides and Northern Isles; but I have no authority for subprovince 26.

Mr. H. Groves tells me that he believes the nest has been found in the north of Dorsetshire; but some confirmation of this locality is desirable, as this would extend the breeding-range two degrees further south.

PYRRHULA RUBICILLA (*Pall.*). Bullfinch.
Provinces I.–XVII.
Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

Though not an abundant species, the Bullfinch appears to be widely distributed in Britain. Mr. Dunbar describes it as breeding regularly in Sutherland and Caithness; and Mr. Danford marks it as nesting every year in Ross-shire.

LOXIA CURVIROSTRA (*Linn.*). Common Crossbill.
Provinces I.–V. VIII. X. XI.–XV. XVII.

Subprovinces 2, 3, 5–8, 11, 13, 20, 22, 25, 26, 28, 29, 30, 31, 34, 35.

Lat. 50°–59°. "Scottish" type, or Northern.

The Crossbill appears to be an increasing species in Scotland, and, from having been more frequently found breeding in the northern counties, seems to belong rather to the "Scottish" than the "British" type, though the nest has occurred in scattered localities throughout Great Britain.

Commencing from the south, the nest has been found in the following counties:—Devon (Zoologist, p. 39), Somerset (*Mr. W. D. Crotch*), Hants (Zoologist, p. 189), Sussex (*Mr. W. Borrer*), Kent (*Mr. G. Jell*), Surrey (*Hewitson*), Essex (*Mr. H. Doubleday*), Herts (*Mr. F. Bond*), Norfolk (*Sheppard* and *Whitear*), Gloucester (*Hewitson*), Leicester (*Harley*), East York (*Hewitson* and *Mr. A. S. Bell*), West York (*Mr. H. Reid*), Durham and Northumberland (*Mr. J. Hancock* and *Rev. H. B. Tristram*), Cumberland (*Mr. T. Hope*), Dumfries (*Mr. W. G. Gibson*), Selkirk and Roxburgh (*Rev. T. B. Bell*), Linlithgow (*Rev. J. Duns* and *Mr. T. D. Weir*), Perth (*Mr. A. Pullen*), Banff (*Mr. T. Edward*), Elgin (*Rev. G. Gordon*); and the bird is considered to breed regularly in Aberdeen, Inverness, Ross, and probably Sutherland.

STURNUS VULGARIS (*Linn.*). Starling.

Provinces I.–XVIII.

Subprovinces 1–38.

Lat. 50°–61°. "British" type, or general.

Throughout the mainland and isles, but is much more numerous in some districts than in others, and it has been observed to increase very rapidly in some counties where it formerly was hardly known. Sir W. Jardine marks the Starling as having bred regularly "of late years only" in Dumfriesshire; and Mr. Archibald Hepburn describes it as "a colonist" in Haddingtonshire.

CORACIA GRACULA (*G. R. Gray*). Chough.

Provinces I. II. [III.] VI. VII. XII. XIII. XIV. XVI. XVII. XVIII.

Subprovinces 1, 2, (3), 4, 5, (6), (7), 16, 17, 18, 25, 26, 27, 28, 32, 33, 34, 35, 36.
Lat. 50°–59°. "Atlantic" type.

On the rocky headlands of the south and west coasts, from the Isle of Wight to Ross and Sutherland, in which latter county Mr. Dunbar tells me that it inhabits only a few localities. Formerly nested on Dover cliffs, according to Pennant, who states that a pair brought from Cornwall escaped and stocked these rocks, though the well-known passage from Shakspeare seems to imply an earlier origin.

The species is believed to be now extinct in Sussex and Kent, and very few pairs now remain in the Isle of Wight, and at Purbeck. On the east coast, a few birds only are known to breed about St. Abb's Head and near Fast Castle in Berwickshire.

Though not strictly south-western, its much greater prevalence on the western side of the island, and its southern distribution on the Continent, induce me to refer the Chough to the "Atlantic" rather than to the "British" type.

Corvus corax (*Linn.*). Raven.
Provinces I.–XVIII.
Subprovinces 1–38.
Lat. 50°–61°. "British" type, or general.

Thinly scattered throughout Great Britain, being more numerous in the north and very scarce in the more level and cultivated districts. The Raven is already nearly extirpated in many of the midland and eastern counties, and is not included in either of the two lists which I have received from Lincolnshire.

Corvus corone (*Linn.*). Carrion-Crow.
Provinces I.–XVIII.
Subprovinces 1–32, 35, 36.
Lat. 50°–59°. "British" type, or general.

Frequent in England, becoming rare in the middle and north of Scotland, where its place is supplied by the Hooded Crow. Mr. T. Edward, however, considers the two birds about equally numerous in Banffshire. Mr. R. J. Shearer marks the Carrion-Crow as nesting occasionally in Caithness; and the late Mr. St. John mentions its occurrence in Sutherland, where, however, its nest has not come under the notice of Mr. Dunbar.

Dr. Dewar informs me that he has seen the Carrion-Crow, during the breeding-season, in the Outer Hebrides, where, as in the neighbourhood of Glasgow, he believes that it pairs with the Hooded Crow.

CORVUS CORNIX (*Linn.*). Hooded Crow.

Provinces III. IV. X. XI. XII. XIII.–XVIII.
Subprovinces 8, 11, 22, 24, 25, 26–38.
Lat. 51° or 54°–61°. "Scottish" type, or Northern.

Mr. Laver, of Colchester, has informed Dr. C. R. Bree that the "Dun Crow" occurs in great numbers near the Blackwater River, in Essex, and "some remain and breed there every year. Mr. Laver has frequently seen and taken the nest on Osey Island, in the parish of Steeple, on Ramsay Island, and at Paglesham. His cousin, Mr. Robert Laver, has shot the old bird from the nest, which is generally that of the Carrion-Crow." Dr. Bree has since written to say that the trees in which the Hooded Crow used to breed have been cut down in one of the localities whence he kindly endeavoured to obtain specimens.

Messrs. Gurney and Fisher mention a pair having once nested near King's Lynn in 1816.

There is reason to believe that the Hooded Crow breeds occasionally in North Wales, where the birds have been noticed so late as May. Further information on this point is very desirable.

The Hooded Crow has been known to breed near Scarborough on two or three occasions (*Yarrell*, and 'Zoologist,' p. 6142). A bird which bred at Hackness is still preserved in the Museum at Scarborough.

Mr. Selby marks the Hooded Crow as breeding occasionally in Northumberland; and Mr. J. F. Crellin reports it as breeding annually in the Isle of Man. The bird breeds throughout Scotland, becoming more abundant northwards.

In the neighbourhood of Glasgow, Mr. R. Gray describes the Hooded Crow as constantly pairing with the Carrion-Crow, and says this is the rule rather than the exception; and in Rennie's 'Field Naturalist' (1833, p. 279) Mr. Blyth records that the same observation has been made near Inverness. This circumstance is greatly in favour of the opinion that the two birds are races of the same species.

Blasius treats the Hooded Crow as variety β of *C. corone*.

CORVUS FRUGILEGUS (*Linn.*). Rook.
Provinces I.–XVII.
Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

Decreases northwards; but breeds as far north as Caithness (*Mr. R. J. Shearer*); not, however, extending to the Western or Northern Isles.

CORVUS MONEDULA (*Linn.*). Jackdaw.
Provinces I.–XVIII.
Subprovinces 1–35, 37.
Lat. 50°–60°. "British" type, or general.

To the extreme north of Scotland; and a few pairs breed in South Ronaldshay (*Low,* and *Baikie* and *Heddle*).

PICA CAUDATA (*Flem.*). Magpie.
Provinces I.–XVIII.
Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

To Sutherland and Caithness; but does not breed in the Scottish isles.

GARRULUS GLANDARIUS (*Leach*). Jay.
Provinces I.–XVI.
Subprovinces 1–25, 26, 27, 28, 29, 30 ?, 32.
Lat. 50°–57°. "English" or Southern type.

Throughout England, reaching as far north as the middle of Scotland. Macgillivray describes the Jay as "found here and there in the woods skirting the Grampians, from Forfar to Dumbarton, and in all the more or less wooded districts southward."

Colonel Drummond-Hay marks the Jay as breeding regularly in Perthshire; and Captain Orde describes it as occurring in Argyleshire wherever there is much copse-wood.

GECINUS VIRIDIS (*Boie*). Green Woodpecker.

Provinces I. VIII. IX. XI. XII.?
Subprovinces 1, 15, 17, 20, 21?, 22, 23, 24, 25?
Lat. 50°–55°. "English" type. Not in Ireland.

Not a common bird, but marked as nesting regularly in every county as far north as Derbyshire. In the north of Yorkshire it becomes scarce, and nests only occasionally in Durham and Northumberland.

The Green Woodpecker is not included in either of the two lists which Mr. J. F. Brockholes has sent from Lancashire and Cheshire; but Mr. C. S. Gregson informs me that the bird breeds in the latter county. Mr. Gregson also states that "the Green Woodpecker breeds in Barron Wood, Cumberland, close to the borders of Scotland," and "also in Westmoreland." Dr. Heysham, however, only knew it as a rare visitor to Cumberland; nor is it marked in the lists which I have received from Mr. Gough and Mr. T. Hope.

PICUS MAJOR (*Linn.*). Great Spotted Woodpecker.

Provinces I.–V. VII.? VIII.–XI. XV.
Subprovinces 1, 2–15, 18?, 19, 20, 21, 22, 23, 24, 29–31.
Lat. 50°–58°. "English" type. Not in Ireland.

Breeds in small numbers in nearly all the southern and midland counties of England, becoming rarer northwards.

Very scarce in Scotland, though Macgillivray describes it as formerly not uncommon near Dunkeld, and mentions Loch Ness, the Spey, and Braemar as localities where it is not unfrequent. The bird has been observed by Mr. Selby on the banks of the Dee and Spey.

Mr. T. Edward marks the Great Spotted Woodpecker as resting occasionally in Aberdeenshire, and in the 'Natural History of Dee-side' it is described as resident in the woods, but very rare.

Mr. Dunbar considers that it breeds regularly in the woods at Castle Grant, in East Inverness; and he tells me that the bird has been observed also in Ross-shire.

PICUS MINOR (*Linn.*). Lesser Spotted Woodpecker.
Provinces I. II. III. IV. V. VIII. X.
Subprovinces 2–15, 19, 20, 22, 23.
Lat. 50°–55°. "English" type. Not in Ireland.

More southern in its distribution than the former, not reaching further north than Yorkshire.

Yarrell mentions its having been found in Lancashire; but I have no authority for its nesting in that county nor in any part of Wales.

Obs.—The Great Black Woodpecker (*Dendrocopus martius*) has been recorded as breeding in a brick wall at Claremont in Surrey (Naturalist, 1851, p. 20); also in an oak-tree in the New Forest (Zoologist, 1862, p. 8091). It seems possible that in each case some other bird was mistaken for this species.

YUNX TORQUILLA (*Linn.*). Wryneck.
Provinces I.–V. VIII.–XII.
Subprovinces 2, 3–15, 19, 20, 21, 22, 23, 24, 25.
Lat. 50°–55°. "Germanic" type. Not in Ireland.

Rare in the northern counties, and apparently much less numerous on the western side of England. Does not breed in Cornwall, and is very rare in Devon. I have no authority more recent than Pennant for its breeding in Wales.

Mr. Gregson has only once found the nest in Lancashire; and Mr. Smurthwaite has never seen the bird in North-west Yorkshire. Mr. Gough, however, describes the Wryneck as breeding regularly in Westmoreland; and in Loudon's 'Mag. of Nat. Hist.' (vol. iii. p. 172) it is included among the summer visitors to Carlisle.

Though the Wryneck has been observed a few times in the south of Scotland, its nest has not been found.

CERTHIA FAMILIARIS (*Linn.*). Tree-Creeper.
Provinces I.–XVII.

Subprovinces 1–32, 34, 35.
Lat. 50°–59°. "British" type, or general.

On the mainland to Sutherland (*Mr. St. John*) and Caithness (*Mr. Dunbar*), but does not reach the Scottish isles.

TROGLODYTES PARVULUS (*Koch*). Common Wren.
Provinces I.–XVIII.
Subprovinces 1–38.
Lat. 50°–61°. "British" type, or general.

To the extreme north of Scotland. Common in the Outer Hebrides and Orkney, and "a few breed annually in Shetland."

UPUPA EPOPS (*Linn.*). Hoopoe.
Provinces II. III. IV.
Subprovinces 4, 5, 6, 7, 12.
Lat. 50°–52°. "Germanic" type. Not in Ireland.

The Rev. A. C. Smith informs me that a nest, containing young birds, has been taken in Wiltshire. The Rev. O. Pickard-Cambridge writes that a pair of Hoopoes are reported to have bred at Warmwell, in Dorsetshire, many years ago.

Mr. Jesse, in his 'Gleanings,' mentions a nest found near Chichester. Latham records another pair whose nest was built in Hampshire; and Gilbert White also records that a pair of Hoopoes frequented, for some weeks, an ornamental piece of ground adjoining his garden at Selborne, and seemed disposed to breed, until driven away.

Mr. Knox tells me that the nest has been found at Southwick, near Shoreham.

Mr. Blyth noticed a pair frequenting a garden near Tooting in 1833 ('Field-Naturalist,' 1834, p. 53); and in the 'Zoologist' (p. 564) Mr. J. P. Bartlett notices some eggs taken near Dorking in 1841.

The Rev. H. B. Tristram informs me that the nest has once occurred in Northamptonshire.

SITTA CÆSIA (*Meyer*). Nuthatch.
Provinces I.–XII.
Subprovinces 1–20, 21?, 22, 23, 24, 25.
Lat. 50°–55°. "English" type. Not in Ireland.

Throughout England; but rare in the north-western counties.

Mr. Eyton describes the Nuthatch as common in Shropshire and North Wales. Mr. Gregson considers it numerous at Dunhorn Park, on the Cheshire side of the Mersey, and also in the woods at Wyresdale, North Lancashire; but Mr. Brockholes has not met with it in either county.

Dr. Heysham records one pair as breeding regularly, in his day, in Cumberland.

Mr. Hancock marks the Nuthatch as breeding occasionally in Durham; and Mr. Selby has found the nest in Northumberland.

CUCULUS CANORUS (*Linn.*). Cuckoo.

Provinces I.–XVIII.
Subprovinces 1–35, 36, 37, 38.
Lat. 50°–61°. "British" type, or general.

Throughout the mainland; but appears to be less numerous in the isles.

Mr. John Macgillivray has recorded its occurrence in North Uist. Messrs. Baikie and Heddle tell us that a few breed every season in the retired parts of Hoy and Waas. Dr. Saxby describes the Cuckoo as a very rare visitor to Shetland, where, however, he has obtained young birds not fully feathered.

ALCEDO ISPIDA (*Linn.*). Kingfisher.

Provinces I.–XV.
Subprovinces 1–28, 29.
Lat. 50°–57°. "English" type, or Southern.

Thinly scattered throughout England and the south of Scotland.

Breeds regularly in Ayr, occasionally in Lanark, regularly in nearly all the counties of subprovince 28, regularly in Stirling and Clackmannan, and perhaps every year in Perthshire, where it is very rare.

It is sad to think that this beautiful ornament of our streams is fast disappearing before the unceasing persecution of would-be collectors; and since its feathers have become a fashionable ornament of dress, even the ladies have now to be added to the list of the enemies of the Kingfisher. To salmon-fishers the sight of the living bird ought to more than compensate them for the loss of the best of flies.

HIRUNDO RUSTICA (*Linn.*). Chimney-Swallow.
Provinces I.–XVIII.
Subprovinces 1–35, 36, 37, 38.
Lat. 50°–60° or 61°. "British" type, or general.

Throughout Great Britain, and also reaches the Scottish isles. Mr. John Macgillivray describes *H. rustica* as the only Swallow found by him in the Outer Hebrides, where it did not arrive till the end of June. Messrs. Baikie and Heddle say that a few pairs build annually near Kirkwall; and Dr. Saxby tells me that a nest was once taken in Lerwick.

CHELIDON URBICA (*Boie*). House-Martin.
Provinces I.–XVIII.
Subprovinces 1–32, 34, 35, 37, 38.
Lat. 50°–60° or 61°. "British" type, or general.

Builds regularly as far north as Sutherland and Caithness; but does not appear to reach the Outer Hebrides, nor has Mr. Graham found its nest in the islands of Argyleshire.

In Orkney, the House-Martin builds at Kirkwall and about the Cathedral of St. Magnus (*Messrs. Baikie* and *Heddle*).

COTYLE RIPARIA (*Boie*). Sand-Martin.
Provinces I.–XVIII.
Subprovinces 1–32, 34, 35, 37, 38 ?
Lat. 50°–60°. "British" type, or general.

Ranges to the extreme north of the mainland; but, like the former species, the Sand-Martin has not been found breeding in the isles of Argyleshire.

W. Macgillivray has noticed that Sand-Martins frequent the sand-banks on the shores of the northernmost Hebrides. They build in Orkney, and perhaps occasionally in Shetland.

CYPSELUS APUS (*Illig.*). Swift.
Provinces I.–XVII.

Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

Throughout the mainland; and breeds also in Mull and Iona (*Mr. H. D. Graham*); but does not build in Orkney, or Shetland, or the Outer Hebrides.

Caprimulgus europæus (*Linn.*). Nightjar.
Provinces I.–XVII.
Subprovinces 1–34, 35.
Lat. 50°–59°. "British" type, or general.

Less numerous in the north of Scotland, breeding occasionally only in Caithness (*Mr. Shearer*).

Mr. H. D. Graham reports the Nightjar as breeding regularly in Mull.

Columba palumbus (*Linn.*). Wood-Pigeon.
Provinces I.–XVII.
Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

A common species in nearly all parts of Britain, and, though Mr. H. D. Graham does not include the Wood-Pigeon in his list of the birds of Iona, Mr. J. K. Wilson describes it as breeding annually in the island of Mull.

The Wood-Pigeon extends to the extreme north of the mainland, but does not reach the Scottish isles. Its rapid increase of late years in the Lothians has been frequently commented upon.

Columba œnas (*Gmel.*). Stock-Dove.
Provinces II. III. IV. V. VIII. IX. X.
Subprovinces 4–13, 14, 15, 19, 20, 21, 22, 23.
Lat. 50°–54°. "Germanic" (or "English") type. Not in Ireland.

There is a peculiarity in the distribution of this bird, since it seems to be absent during the breeding-season from several of the south-western counties, in which, and even in Dorsetshire, it appears chiefly as a winter visitor. Still there is good authority for its breeding in Gloucester (*Rev. F. J. Scott*), Hereford, Shropshire, and perhaps in North Wales (*Eyton*). The nest has been found both in East and West Yorkshire, but hardly, I believe, beyond the 54th degree of latitude. The bird seems to be most numerous in some of the midland and eastern counties of England, and has not been observed in either Scotland or Ireland. Mr. J. F. Brockholes, who has taken especial pains to identify the species, tells me that the Stock-Dove breeds regularly in Cheshire and South Lancashire, where the nest is placed in fir-trees and ivy. The Rev. O. Pickard-Cambridge describes the bird as building in exactly the same kind of locality, among matted ivy, close to the trunks of cedars and fir-trees, more often in the holes of old trees where limbs have been broken off.

COLUMBA LIVIA (*Briss.*). Rock-Dove.
Provinces I. [II.] V.–VIII. X. XII.–XVII.
Subprovinces 1, 2, 3, (4), 13, 17, 18, 20, 21 ?, 22, 23, 25, 26–38.
Lat. 50°–61°. "Atlantic" (or perhaps "Scottish") type.

Far more numerous in the north; and on the west than on the east coast of Scotland.

Commencing from the south of England, the Rock-Dove used to breed formerly at Purbeck (*Rev. H. Austin*); but there is no direct evidence of its having ever bred in the Isle of Wight.

Mr. E. H. Rodd includes the Rock-Dove in his list as breeding occasionally in Cornwall. The Rev. M. A. Mathews has observed it building in the cliffs about Lynton. Mr. W. D. Crotch reports it as breeding in Somersetshire. The bird is said to be common in Gloucester and Monmouth.

Sir W. Jardine gives Caldey Island as a locality, and Mr. Tracy marks the bird as breeding in Pembrokeshire. The Rev. H. Harpur Crewe has observed it breeding in Denbighshire, and there are probably several other localities in South and North Wales.

Mr. J. F. Brockholes tells me that there is a colony at Beeston Castle, Cheshire, and that he once noticed a pair frequenting the high banks of the Mersey during the breeding-season. Mr. C. S. Gregson informs me that the Rock-Dove breeds at

Whitbarrow Scar; and Mr. J. B. Hodgkinson has found its nest occasionally in Cumberland: it breeds also in the Isle of Man, as I learn from my obliging correspondent Mr. J. F. Crellin.

The Rock-Dove is numerous in many localities along the west coast of Scotland, especially in the isles, and abounds in the Outer Hebrides, in Orkney, and in Shetland, and, though less numerous on the east side of Scotland, breeds regularly in Caithness, Elgin, Banff, and in a few localities in Aberdeenshire, at Down Castle, Stirling (*Mr. J. Murray*), in the Isle of Man, on the Bass Rock, and at Fast Castle, Berwickshire.

On the east coast of England, the Rock-Dove breeds only at Flamborough; it also breeds in a few rocky valleys or inland cliffs in Derby, York, Leicester, Stafford, Shropshire, and Somerset.

Like the Dartford-Warbler, the Rock-Dove on the European continent is quite a southern species.

TURTUR AURITUS (*G. R. Gray*). Turtle-Dove.
Provinces I.–V. VI.? VIII. X.
Subprovinces 2, 3, 4–15, 17?, 19, 23, 24.
Lat. 50°–54° or 55°. "English" (or "Germanic") type.

Breeds in South Devon occasionally, and Somerset; regularly in Gloucester, and perhaps also in Pembroke; regularly in Herefordshire, Shropshire, and Stafford: in the last two counties it is rare; in Derbyshire occasionally (*Mr. J. J. Briggs*); in Cheshire very rarely (*Mr. J. F. Brockholes*), and in the south of Yorkshire (*Mr. Reid*). To the east and south of this line, the Turtle-Dove nests in all the midland and southern counties, but is described as scarce in Lincolnshire.

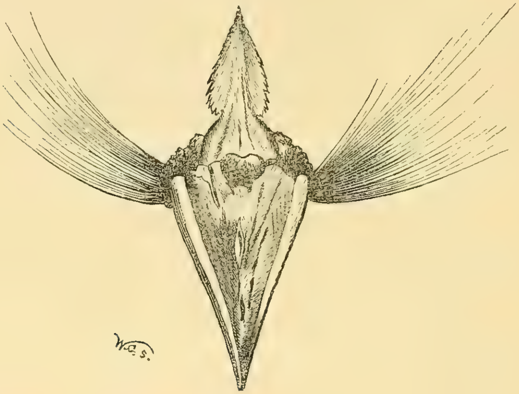
Dr. Heysham records that a young bird was once taken in Cumberland, where the species is very rarely seen; and the Rev. H. B. Tristram tells me that the nest has once been found as far north as Durham. Yarrell says that the Turtle-Dove is found in Lancashire, and is not uncommon in Cornwall; but I have not been able to obtain any evidence of its breeding in either of these counties. It seems also safer to consider the locality of South Wales uncertain for the present.

[To be continued.]

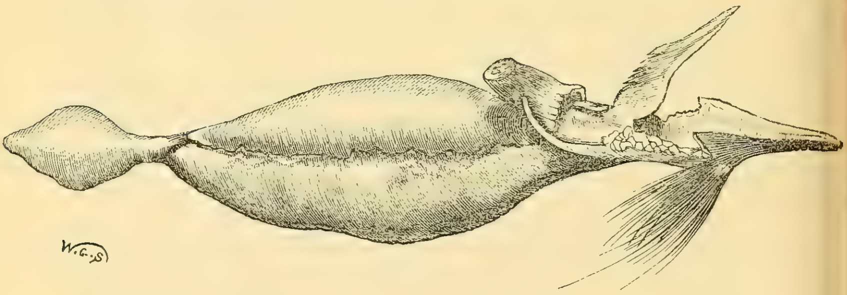
XIII.—*On the Gular Pouch of the Male Bustard* (Otis tarda, *Linn*). By William Henry Cullen, M.D.

Residing in a district where the Great Bustard breeds freely, and where, during the seasons of migration, it may even be said to abound, I read with the greatest interest Mr. Alfred Newton's paper "On the supposed Gular Pouch of the Male Bustard," in the 'Ibis' for 1862 (p. 107), and determined, as far as practicable, in answer to his call, to elucidate this subject by the examination of recent specimens. In consequence of my inquiries, many fine ones have been repeatedly brought to me, but always in a useless state, as it is the invariable custom of the natives throughout the East to cut the throat of every animal directly it is caught or shot. Though disappointed at not finding it in several instances, I felt no doubt that the pouch existed, as I was assured, in answer to my inquiries, by a very intelligent Tartar ("Avji") sportsman that both his father and himself had repeatedly seen it in the Crimea, though in his opinion it could only be detected during the breeding-season, after which it gradually diminished in size, till it was hardly discernible in the winter. He had never discovered any water in it, or seen any appearance of it in the female. It seems, from his statements, that the bird does not arrive at maturity till the fourth year, previously to which period he has never been able to detect its presence.

On the 5th of January my younger son was fortunate enough to shoot two full-grown males, weighing seventeen and twenty pounds respectively, while on their flight southwards. They were, of course, brought home uninjured; and on looking into the mouth of the smaller one, the opening into the pouch was at once detected from its striking resemblance to the woodcut in Mr. Newton's article. The larger one was then inspected, and, to our great satisfaction, this was also found to possess the well-marked opening under the tongue. This opening is large enough to admit readily the little finger, and is surrounded by what has all the appearance of a sphincter-muscle. A careful dissection, the day after, while the birds (as there was a severe frost) were quite fresh, showed that the pouch extended as far down as the furcular bone, enveloped closely throughout its extent by a thin muscular covering, exactly analogous in structure



to the *cremaster* or *platysma hyoides.* The structure of the sac or pouch itself is certainly not composed of cellular tissue, as stated by Degland; but in each of these specimens is a separate and distinct though delicate bladder, very much resembling in appearance the air-bladder in fishes. Its shape, which is very accurately represented in the accompanying drawing (for which I am indebted to Mr. William Campion),



made when the pouch was suspended so as to be filled with water, is very peculiar. It is dilated very considerably just below the sphincter, is constricted towards the middle of the neck, and in the depression between the furcular bones swollen out into an ovoid shape. The larger of these pouches measured, when suspended and filled with water, nine inches, and contained fourteen ounces of water, though my Tartar says he has seen them during the breeding-season more than twice as large. A knowledge of the habits of these birds as observed in a state of nature may perhaps lead us to some conclusion as to the use of this appendage.

Just before the breeding-season the male Bustards may be seen fighting furiously together for the possession of the females, running at each other with their heads down, their necks (at this time enormously inflated) stretched out, and making a peculiar noise or cry resembling "ook" in sound. Again, while the female is sitting, the male struts about, occasionally uttering the same cry, at a distance of 100 or 150 feet, with his neck swollen, wings half-expanded and drooping, while the tail-feathers are reversed in a curious manner till they almost touch his back. If caught at this time (as is very commonly done by the Tartars, who set up a very ingenious decoy of a female, surrounded by traps), he becomes very violent when approached, and makes the same peculiar note. For about the period of two months, that is from the time of choosing the females till the young are hatched, he appears to be able to indulge in this cry, after which the sound is never heard, in whatever month he may be caught. All these facts would certainly seem to favour the idea that the pouch is intended to contain air, and that by the action of the muscular tissue covering it conjointly with that of the sphincter at the mouth, the Bustard may be thereby assisted, according to the not improbable opinion of my Tartar, in producing this peculiar sound, which is only to be heard during the time when the pouch is most fully developed. I may say, in conclusion, that my Tartar and his father have caught probably a thousand Bustards here and in the Crimea; but in no instance has water been ejected upon them when going up to secure the birds, which must surely have happened once or twice if the pouch was intended to contain water, and could be used for the purpose of defence, as mentioned by the informant of Daines Barrington.

Kustendjie, Bulgaria, January 23, 1865.

⁂ We have much pleasure in thus being able to lay before our readers Dr. Cullen's interesting account of his re-discovery of this organ in the Bustard, the existence of which, we think, must now be considered as placed beyond controversy. We trust that our correspondent will continue to give the subject his attention, and that he may be fortunate enough to ascertain satisfactorily the part this singular structure fulfils in the bird's economy. With regard to the paper, in a former volume of the 'Ibis,' to which Dr. Cullen alludes, we may take this opportunity of remarking that it was therein suggested (Ibis, 1862, p. 111) that the original preparation of the pouch, made by Douglas, its first discoverer, might have been that said by Montagu to have been contained in the Leverian Museum. The truth of this suggestion is confirmed by a copy recently received by us from Mr. Osbert Salvin, of the Sale-Catalogue of Donovan's 'London Museum and Institute of Natural History,' which is stated to have contained, among other specimens of birds, "the entire collection of the British series in the late Leverian Museum"; while the last lot (878) in the sale is described as consisting of a group of Great Bustards, in which is included "the very singular water-pouch of the male bird, discovered by Dr. Douglas." Donovan's collection was sold in 1817 or 1818, and it is therefore quite possible that this specimen, possessing so much historical interest, may yet be traced further.—Ed.

XIV.—*Notes of a Visit to the Island of Rodriguez.*

By Edward Newton, M.A., C.M.Z.S.

On the morning of the 26th October, 1864, I sailed from Port Louis, in H.M.S. 'Rapid'; and on Sunday, the 30th, after a comfortable voyage, we sighted what was supposed to be the island of Rodriguez. As it lay dead to windward, our captain thought there was no use in working his men, on their only day of rest, by beating up; so he left off steaming and quietly took a north-easterly course, expecting that we should be close to the land the next morning, and be able to get in without trouble. To our disgust, the next morning showed us the island at least thirty miles to windward, thereby proving that what had been seen the day before was only land in imagination. Hereupon we began steaming again, and did all we could; but the 'Rapid' belies her name, and at sunset we were still some fifteen miles from Port Mathurin, which lies about midway on the north side of the island. As the reefs extend many miles from the coast, and are supposed to be not accurately laid down on the chart, we stood away to the north-east for the night. At daybreak on the 1st November the land was well to leeward; but the wind was light, and it was nearly midday before we hove to for the pilot, a corporal of our police, who came on board with the police magistrate (the governor, so to speak, of the island), and two other gentlemen. The latter had gone down in the colonial steamer 'Victoria,' about a fortnight before—one for his amusement, the other to vaccinate the population. On board the 'Rapid' with me were Captain Anson, R.A., and a magistrate who was going on in the ship to visit the Chagos and other dependencies of this place in the Indian Ocean.

On landing at two o'clock we found the rest of the party who had gone down in the 'Victoria' (among whom was Captain Barkly, aide-de-camp to the Governor of Mauritius) established in the prison of the island, which at the time of their arrival happened to be without any of its legitimate occupants. Before starting, all the members of this company had made the greatest profession of collecting all subjects of natural history; but I found that, beyond a few ferns and an infinity of walking-sticks, next to nothing had been done. Many of the islets had been visited, and innumerable birds' eggs, chiefly of Terns, had been brought away; but all had been smashed or eaten except one or two of the beautiful white *Gygis candida*, which had been boiled hard by way of preserving them! They had also a few skins of Terns; but the sexes had not been identified. Of land-birds they had hardly seen any, and declared there was only one species—a yellow bird—on the island; but that they had not procured. One gentleman, however, said he had seen some bird as big as our "Martin" (*Acridotheres tristis*), but altogether different from it.

With this gentleman I immediately started, and proceeded some three miles to the westward, keeping half a mile or so from the shore, or sometimes walking on it. The sun was broiling hot, and nearly the whole way was up and down hill. The country was covered with grass, pretty well eaten down by cattle; here and there were scrubby trees, mostly the resinous "Bois d'Olive," a Vacoa (*Pandanus*, sp. ?), different, of course, from anything in Mauritius, and an *Acacia*, very like *A. lebbek*. The island is very well depicted in Mr. Higgin's drawings, engraved in "The Dodo and its Kindred" (plates iii. and iv. *bis*). It may be generally described as a long hog-backed range of hills, running from east to west, and sending out spurs to the sea-coast. The height in the centre may be from 1000 to 1500 feet. There is no forest, so far as I could learn; and the tradition is that it was destroyed by fire some forty or fifty years ago; but this story I think must be incorrect, as otherwise in so short a time there would surely be some traces of it left, whereas there are none. Moreover I cannot find that Leguat speaks of it as being anything then beyond what it now is; and the place of his settlement, with the trees dotted about, is drawn, barring the *Solitaires*, just as it is now.

To go on with my story: I soon saw the "yellow bird," which a negro who was with me called a "zozo (i. e. *oiseau*) du pays," and declared at first to be the only bird in the island. He afterwards admitted the existence of a "Perruche"; but that, he said, was all. The "yellow bird" was perfectly tame; and on shooting one, I at once saw that it was of the same species as the skin sent from here, nearly twenty years ago, by Colonel Lloyd, and which I had been lately disposed to think was an accidental variety either of *Foudia madagascariensis* or *F. erythrocephala*. It is, however, decidedly distinct, and a very well-marked species* too. It has a very pretty song, not unlike that of the

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* The specimens sent home by Mr. Edward Newton were exhibited at the meeting of the Zoological Society of London, 4th January, 1865, and the following diagnosis given of the species therein designated.

"FOUDIA FLAVICANS, sp. nov.

"*F.* major, capite et pectore pulchre luteis, alis unifasciatis, pedibus validioribus.

"*Descr. maris adulti.* Olivaceo-virens, dorso striolato; subtus pallidior; capite, collo, pectore et uropygio pulchre luteis, capistro et genibus rubro-aurantiaco ardescentibus; abdomine medio albido-lutescente; alis albido late unifasciatis; regionibus ophthalmicis nigris; rostro gracili, subincurvo, nigro; pedibus validioribus, dilute brunneis; iridibus perfuscis.

"Long. tota 5, alæ 2·72, caudæ 1·9, acrotarsi ·85, dig. med. cum un-

European Goldfinch (*Carduelis elegans*), while the two other species of *Foudia*, just mentioned, are almost songless. In habits it resembles *F. erythrocephala* in its way of picking amongst the extreme buds and leaves of branches, hanging often back downwards. Its beak is long, and more like that of this species than of *F. madagascariensis*. It is exceedingly numerous, and though many had paired, and were evidently breeding, I saw a flock of at least one hundred, all in the brown stage of plumage, and probably many of them therefore immature birds. The adult hens are dark brown, like the same sex in the other two species. I shot two pair, and had them skinned by Isidore Legentil, who had gone down in the 'Victoria' to collect plants for M. Bouton. Soon after I shot them I came upon a small flock of "Perruches," and got a right and left shot, but the first one the fellow did not mark (though it was as dead as a herring), and I only managed to pick up the second. This was to all appearance identical with the Mauritian and Madagascar species (*Agapornis cana*), and as the bird is said to have been introduced into Rodriguez, I have no doubt it is so. The man who was with me tried to assure me that it came from America; but this assertion was afterwards explained by the police magistrate, who told me that the first examples were brought thither by an American whaler, which had got them in Madagascar.

Going on to a hill, where the negro said there were wild Guinea-fowl, I heard a deep and most melodious *meruline* whistle—one note only, and then a sort of "tchou-ti-tchou," as of a Nightingale. On my asking the creole what the bird was, he said, "ça même zozo du pays avec li bec et li queue long-long." Going up, I saw what looked to me like a *Calamodyta*, holding his head down, and jerking his tail over his back. He almost immediately flew away, and I fired an ineffectual shot at him; but he stopped in another bush close by, and I killed

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gue ·75, hallucis cum ungue ·64, rostri a fronte ·56, ejusdem a rictu ·54 poll. Angl. et dec.

"*Descr. fœminæ adultæ.* Fusco-virens, dorso striolato; subtus multo pallidior; alis late unifasciatis; rostro et iridibus perfuscis; pedibus fuscis."—Ed.

him *. I have little doubt that this is a new species. From what I can make out, it is probably one of the *Drymœcinæ*, and nearly allied to the genus *Orthotomus*. Its habit, too, of raising its tail is just as Dr. Jerdon describes in *O. longicauda* (B. Ind. ii. p. 166). If my supposition is right it will be satisfactory, as affording another proof of the connexion between the Mascarene Islands and India; and this will be the case should Rodriguez, the easternmost one of them, be found to possess an Indian form which the more western members of the group are without. I have no doubt that my new bird is exceedingly common in that island; and if I had only had the time, I could have got a good series of specimens.

After this we had to turn homewards. We walked chiefly on the beach; and I saw, as I think, a Curlew (*Numenius arquatus*)—not Whimbrel (*N. phæopus*); and I had a shot at a Turnstone (*Strepsilas interpres*), of which I saw a flock of some six or seven.

After dinner it was arranged that we should start in boats at midnight, the tide then serving, for the caves on the south-west side of the island. We eventually got off about one o'clock in the morning of the 2nd November. The police magistrate took Captain Anson, myself, and three others in his whale-boat. The Captain of the 'Rapid' took in his Captain Barkly, and two more of the party. The latter boat was manned by four blue-jackets, as well as the pilot to show the way, while we had only two policemen for our crew. As we went inside the reef, the night was spent in poling, and occasionally rowing, and I scarcely got a wink of sleep. Towards daylight we passed by some islets, from one of which proceeded a clamour like that of a distant crowd—produced, we were told, by the "Fouquets" (*Puffinus chlororhynchus* ?); and as the day dawned, I saw several Shearwaters sailing round it. From another islet harsher sounds were heard, and these were from the Boobies (*Sula piscator*) just waking up. I could see many of them sitting on the low bushes, while others were starting off for their day's fishing. How I wished I could have had time to have spent a day on each of the islets, or at least to have visited them; I might have had just such a trip as Mr. Salvin's to the Keys of Honduras (Ibis, 1864, p. 372), and I dare say have got as many eggs. But it was not to be done; we were bound to the caves, and to the caves we must go. About six o'clock we landed, and at once walked up to the first cave, about a quarter of a mile inland. This part of the island appears to be quite flat, and one mass of rock. However, some stunted shrubs manage to grow; and there were several of the yellow *Foudia* about, singing cheerfully, and I likewise heard one of the new *Drymœca* (?) also singing. The cave was much the same as all other caves—plenty of stalactites and stalagmites; the width about 50 feet, the height from 20 to 70 feet; the floor nearly flat, and generally covered with a deep fine sand, perfectly dry. Very little stalagmite formation appeared to be going on at this season. Near the entrance were a few crumbling pieces of land-tortoise shells, which fell to pieces on being picked up. I longed for a few shovels, and a lot of men to dig; but on the present occasion it would have been out of the question. The length of this cave was said to be three-quarters of a mile, and the effect was very good when we burnt a blue light. We then returned to the boats, and sailed back some three miles on our homeward voyage, when we stopped for breakfast. I had a most agreeable set of companions, but they were not exactly suited for such an expedition as I had in view.

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* The specimen thus obtained was exhibited at the Meeting of the Zoological Society, 4th January, 1865, and was characterized as follows:—

"DRYMŒCA (?) RODERICANA, sp. nov.

"*D.* supra cinereo-olivacea, subtus flavescens, annulo periophthalmico paroticisque albis flavido tinctis.

"*Descr. maris adulti.* Rostro gracili, sub apicem emarginato; maxilla incurvata; mandibula recta, ultra medium levissime sursum inclinata; naribus basalibus, superne membrana clausis, inferne rima longitudinali apertis; rictu setoso; alis brevioribus, rotundatis, remigum primo brevissimo, secundo abrupte longiore et nono æquali, tertio quarto et quinto subæqualibus longissimis, externe emarginatis; cauda rectricibus decem, elongata, gradata; acrotarsis longiusculis. Supra cinereo-olivacea, flexura flavescente, remigibus rectricibusque olivaceo-fuscis, illis externe griseo limbatis; subtus pallide flavescens, annulo periophthalmico paroticisque albis pallide flavido tinctis; maxilla perfusca flavo limbata; mandibula flava; pedibus schistaceo-brunneis.

"Long. tota 5·75, alæ 2·8, caudæ 2·6, acrotarsi ·9, dig. med. cum ungue ·58, hallucis cum ungue ·51, rostri a fronte ·54, ejusdem a rictu ·7 poll. Angl. et dec."—ED.

About eleven o'clock we started for another cave, about two miles off. It was most intensely hot, and we soon found that our guide knew but little of the way; so I suggested a halt in order that he might go on and find out where he was. In two minutes we were all sound asleep, and so we remained for nearly an hour, when some one heard the guide shout, and on we went again, up a small rivulet with steep sides, the water in which was brackish and quite undrinkable by itself, and amid a grove of thick fan-palms. Here I saw the only forest trees I came across; they were "bois d'olive," and perhaps sixty or seventy feet high, and three or four in circumference at six feet from the ground. I also saw a pair of my new *Drymœca*, with food in their bills. They evidently had a nest, and I stayed back to watch them, but they both managed to get rid of the food, I suppose by going to their young. I was afraid of missing my way, and so putting the rest of the party to inconvenience, that I could not wait till the birds had found a fresh supply. Arrived at the cave, it was found to be too late to enter, for fear of losing the tide. All my companions turned back at once, excepting one who went some hundred yards or so inside with me. I picked up a shell or two of a land-tortoise, and two bones; one of which on examination I find nearly fits the representation of the *left* tarso-metatarsus in Mr. Strickland's work (plate 15. fig. 2), with the exception that it is as perfect as the *right* one depicted on the same plate (fig. 3). The other bone is a fragment, of which both the extremities are wanting. Both are almost free from any earthy deposit upon them, and indeed where I found them there appeared to be no drip at all. In one of the cavities of the tarso-metatarsus there is just a small quantity of white matter—lime, I suppose, in one of its forms, but it comes off easily enough. They are of an ivory-yellow—almost, I should say, their natural colour.

Since my return to Mauritius, I have found that Captain Barkly, when in Rodriguez, picked up a third bone, which at first he thought was only a turtle's; but it turns out to be an undoubted right femur of a bird, and similar to the specimen from the Paris Museum figured in "The Dodo" book (plate 14. fig. 8)*.

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* These three bones were exhibited at the meeting of the Zoological

But to conclude my story. On getting to the boats we immediately started homewards, and, though it was a dead beat, we sailed back to Port Mathurin, which we reached about six in the evening. The next morning, to my disgust, it was decided to return to Mauritius immediately. Notwithstanding that we did not get under weigh till late in the afternoon, that day was a *dies non* to me; and thus ended my visit to Rodriguez, where I could have well managed to spend a month to my own advantage. Just before leaving, the police-magistrate brought me two young fledged *Foudiæ,* and they are now alive here in Mauritius, but will not feed themselves. I am only afraid I may not have time to look properly after them.

To sum up the fruits of my trip, besides the Dodo's bones, I have one, if not two, new species of birds. There may be other land-birds, but the people could tell me nothing about them. I heard of a "Serin" (*Crithagra* ?), a "Bengali" (*Estrelda* ?), and a Dove; but whether indigenous or introduced they could not say. There are certainly no Hawks, or "Merles" (*Hypsipetes*), or Swallows. Of sea-birds, there are Noddies (*Anous stolidus*), and Sooty Terns (*Onychoprion fuliginosa*), *Sterna velox,* and the *Gygis*; also one, if not two, species of Shearwater (*Puffinus*), the Booby, and Frigate-bird (*Fregata*); of the last I only saw one individual; besides the Curlew and Turnstone before mentioned. Wild Guinea-fowls are common; they appear to me to be from the Madagascar stock (*Numida tiarata*), and not the African. Of Dodos' remains no one knew anything more than that, "long temps passi, di monde, n'a pas conné qui, fin vini rodé pour li;" which, being interpreted, means, "a long time ago, someone, I know not who, came and looked for it," and this was all the information I could get. I was told that the eggs of the *Foudia* [*flavicans*] were blue, and

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Society on the 14th February; having been identified as the right femur, the left humerus, and the left tarso-metatarsus of *Didus nazarenus,* Bartlett (P. Z. S. 1851, pl. xlv. p. 284),—the very large species of Dodo, which was so strangely confounded by Messrs. Strickland and Melville with the long-legged "Solitaire," *Pezophaps solitarius,* Strickland (*partim*). They will be figured in the Zoological 'Proceedings' for the current year. —Ed.

those of the *Drymœca* [*rodericana*] were white, without spots. I was shown an old nest, said to be that of the former; and I have no doubt it was so, as it was in every way the same as that of the common species here.

Mauritius, November 1864.

XV.—*On the Nests and Eggs of some New Zealand Birds.*

By Edward P. Ramsay.

I have just received a batch of birds' nests and eggs from my friend R. Huntley, Esq., of St. Mary's, Wellington, New Zealand; and not having seen them described in any ornithological publication, I have come to the conclusion that a few notes on the subject may prove acceptable to the readers of the 'Ibis.'

As my stay in Wellington was very short, I cannot describe many species from my own experience, and I must therefore have recourse to Mr. Huntley's information, and take his authority for the identification of the birds. I may mention, however, that the native names, which he sends along with the scientific ones, perfectly agree with those given in Mr. G. R. Gray's "List of the Birds of New Zealand," contained in a former volume of the 'Ibis' (1862, pp. 214–253).

Anthornis melanura (G. R. Gray, *loc. cit.* p. 218).

"Honey-Eater," "Mocking-bird," "Mocker," &c., of the Colonists. *Kohori-mako* of the Natives.

This species of Honey-eater constructs a neat cup-shaped nest of dry twigs and roots, generally lined with fine rootlets and grass; but examples from the neighbourhood of Wellington are invariably lined with white hair and feathers. It is usually placed among some thick mass of vines and bushes, or boughs clustered with the Creeping-fern (*Lomaria filiformis*), the dry fertile fronds of which are often used in the framework. The nests are from 2½ to 3 inches in diameter, and 1½ inch deep. The eggs are three in number, 10½ to 11 lines in length, by 8 to 8½ lines in breadth. They are white or pinkish white, with irregular spots of pinkish salmon-colour crowded together, and in some instances forming a zone at the larger end.

The "Mocker," or "Bell-bird" as it is also sometimes called, is a pretty and lively species. It seems to have a great variety of notes, but yet no continued song. It imitates the Tui (*Prosthemadera novæ-zeelandiæ*) and many other birds remarkably well. It has a great liking for honey from the flower of the flax-plant (*Phormium tenax*). Many specimens which I shot at Auckland had the whole of the forehead covered with the bright yellow pollen of these flowers. I found it also in great numbers luxuriating among the bright red clusters of the tall Metrosideros trees (*M. hypericifolia*).

The "Mocker" is frequently the foster-parent of the Long-tailed Cuckoo (EUDYNAMIS TAITENSIS, G. R. Gray, *loc. cit.* p. 231). Of this latter bird, the eggs which Mr. Huntley sends —one from the nest of *Anthornis melanura,* and another from that of the Fan-tail Fly-catcher (*Rhipidura flabellifera*)—are of a pale yellowish salmon-colour, freckled indistinctly with marks of a deeper hue: they are 10 lines long by 7½ lines broad.

RHIPIDURA FLABELLIFERA (G. R. Gray, *loc. cit.* p. 225).

Like its representative (*R. albiscapa*) in New South Wales, this species is equally lovely and interesting; but so much has already been said upon the subject, that were I to enumerate all its varied and pleasing movements, which are such as cannot fail to strike the most commonplace observer, I should perhaps, after all, be only repeating what has before been described by others. Still, a few remarks on its nidification may not be amiss. I found the New Zealand bird commonly on all three islands at every port I visited; and several times succeeded in finding its nest—a neat, open, round structure, composed of grass, mosses, and very often small fragments of decayed wood, the whole firmly interwoven and covered with cobwebs. It is generally built on some horizontal forked twig, or upon the lower frond of a tree-fern. The height of the nest is from 2½ to 3 inches, its diameter 1½ inch to 2 inches, and depth 1 inch. It is lined either with fine grass, or the scales from the young fronds of the tree-fern. The bird breeds during October, November, and

December. The eggs, which are three or four in number, have a pure white or cream-coloured ground, with spots of light yellowish- and wood-brown, crowded together at the larger end, but scarcely forming a zone. In length they are 6½, by 5½ lines in breadth.

Mr. Huntley forwarded me a nest of this species in December 1862, which contained, in addition to four eggs of its proper owner, one of *Eudynamis taitensis*, as stated above.

CREADION CARUNCULATUS (G. R. Gray, *loc. cit.* p. 227).

Tieke of the natives.

I found birds of this species by no means rare among the thickly-wooded ridges and gullies in the neighbourhood of Wellington; and from the same locality I have frequently received its nests and eggs, kindly forwarded to me by Mr. Huntley. These nests are very bulky; in diameter 4 inches at the base, at the top 3 inches, by 2 inches deep. They are open, composed of roots and small twigs, and are lined with the long scales from the base of the fronds of the tree-ferns. Although the exterior is rough enough, the inside is warm, and neatly finished. The usual site chosen for the nest is among densely-matted clusters of vines, and very frequently it is carefully hidden among the thick tufts of a coarse grass-like plant, which grows on, and hangs down in masses from, the forks of the larger trees.

The eggs are three or four in number, having a white or light cream-coloured ground, with yellowish-brown and dark wood-brown spots, chiefly on the thicker end, besides some obsolete spots of faint lilac. In some the markings are equally dispersed over the whole surface; in others they are crowded together, or form a zone. Many specimens are much pointed at both ends; others have the larger end very much rounded. They vary from 11 to 13 lines in length, and from 7 to 8½ lines in breadth.

PLATYCERCUS AURICEPS (G. R. Gray, *loc. cit.* p. 229).

This species is to be found in tolerable numbers both in the Middle and Northern Islands. In the neighbourhood of Auckland I have repeatedly flushed it from among the long grass, generally in pairs, or in small troops of four or five. It breeds during the months of November and December; selecting some shallow spout of a tree or log, and laying there four or five oval white eggs, in length 11 to 12 lines, by 7 to 8 lines in breadth. These are very much pointed at both ends, and thickest in the middle. Some were forwarded to me taken at Wellington, in November 1862, from a very shallow spout, at the bottom of which was an old nest of the "Totara" (*Petrœca longipes*, G. R. Gray, *loc. cit.* p. 223). It was overhung by the long leaves of the grass-like plant before mentioned.

XVI.—*Ornithology of a Prairie-Journey, and Notes on the Birds of Arizona.* By Elliott Coues, M.D., United States' Army*.

On the 23rd of April, 1864, I left Washington for the Rocky Mountains, being desirous of taking an ornithological tour through the West, and of spending some considerable time at Fort Whipple in studying our western birds in the field. After a long and exceedingly toilsome journey, devoid (as all journeys beyond the precincts of steam must be) of every "creature comfort," but nevertheless exceedingly interesting and profitable to me in a scientific point of view, I arrived here in health and safety. From Washington I went to Fort Leavenworth by steam, thence to Santa Fé in New Mexico by mail-coach, and thence to this place on horseback, travelling with the military command to which I was attached in my official capacity. This Fort is, in round numbers, about 400 miles south-west of Santa Fé; and throughout the whole of the journey—about 2500 miles —I have kept always on the alert, and, especially in the latter stages, had good opportunities for observing and collecting. Now, after a four months' residence, I have become somewhat familiar with the avifauna of this region, and am able to furnish a tolerably full list of its birds, with some brief notes. But first I must sketch, ornithologically, the route hither.

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* Mr. Sclater has favoured us with this communication, which we are very glad to receive, since little has hitherto been known of the ornithological features of the country through which the Author passed, or of that in which he is now residing. His observations there will doubtless throw much light on the distribution of the Nearctic Avifauna; especially when taken in connexion with the information that has resulted from the labours of other workers in Mexico and in Central America. In our last Number we mentioned (*suprà*, p. 117) Dr. Coues's departure for the new State of Arizona, almost in the middle of the North American Continent.

At St. Louis, Missouri, I had the first indication that I was entering upon an avifauna differing from that of the east, by the abundant presence of *Chondestes grammica.* Throughout my whole course this bird was my constant and familiar companion. Near Fort Riley, Kansas, where (delayed by Indian hostilities) I spent ten days collecting, I found further changes, though the type of the fauna was still essentially eastern. The Field-Larks had become *Sturnella neglecta,* the Night-Hawks *Chordiles henryi*; and I met with *Antrostomus nuttalli,* and numbers of *Vireo belli. Actiturus bartramius, Actodromas bonapartii,* and *Ereunetes pusillus* were exceedingly numerous, and I shot one *Spizella pallida.* This was in the last week of May.

Directly westward of Fort Riley, the traveller at once comes upon the "Great Prairie"—that vast level flower-bed which stretches without interruption along the Santa Fé road to the Arkansas River, and with but few breaks quite to the Raton Mountains. Here I immediately met with the true prairie-birds. *Calamospiza bicolor* and *Xanthocephalus icterocephalus* were abundant, especially the former, which is *the* bird, *par excellence,* of those regions. *Eremophila cornuta,* as is well known, breeds in the west much further south than in the east, where, in its spring migration, it does not stop much short of Labrador. *Sturnella neglecta* was still abundant. *Euspiza americana* and *Coturniculus passerinus* held out a few days longer, and then disappeared. The *Calamospiza* stopped abruptly at the first mountains we met; the *Xanthocephalus, Eremophila,* and *Sturnella* continued with us through New Mexico into Arizona.

It was here that I first found the "towns" of Prairie-Dogs (*Cynomys ludovicianus*), with, as usual, abundance of *Athene hypogæa,* as well as the inevitable Rattle-snakes.

Wherever there were ponds, marshes, or small lakes on the prairie, I found *Recurvirostra americana, Numenius longirostris, Steganopus wilsoni, Ægialites vociferus, Actodromas bonapartii,* *Chrœcocephalus franklini,* &c. On making the Arkansas River, I first encountered Ravens—probably *Corvus cacolotl,* perhaps *C. carnivorus.*

The Raton Mountains, to the eastward of Fort Union and Taos, were the first we came to. Here I met with *Herse thalassina, Pica hudsonica,* and *Cyanura stelleri.* I found also *Chrysomitris pinus* and *Planesticus migratorius.*

The next point at which I made any observations of moment was Los Pinos, a New Mexican town on the Rio Grande, about twenty miles below Alboquerque. Here I spent a few days busily in collecting. In this, and all other New Mexican towns, the commonest and most characteristic bird is the pretty little "Burion," or *Carpodacus frontalis* (*familiaris,* M'Call). It is there, what *Spizella socialis* is in the east; breeding indifferently in the court-yards, sheds, under porticoes or eaves, and also in the forks of trees in the streets. It has sharp conflicts with the Barn-Swallows, whose nests it often takes possession of. It is a lively and most agreeable feature in the dirty towns which it honours with its presence, and its song is sweet, clear, and exquisitely melodious. *Hirundo horreorum* and *Herse lunifrons* are also very abundant. Among other eastern forms common on the Rio Grande at this point are, *Agelæus phœniceus, Zenaidura carolinensis, Molothrus pecoris, Tinnunculus sparverius, Cathartes aura, Mimus polyglottus, Melanerpes erythrocephalus, Pyranga æstiva, Dendrœca æstiva,* and *Cotyle riparia.* As birds not hitherto seen, I found *Himantopus nigricollis, Picus scalaris, Colaptes mexicanus,* and a *Contopus,* certainly not *C. virens,* though much like that species. It must be *C. richardsoni,* I think. Also *Sayornis sayus* and *Ibis rubra.*

Across the Rio Grande, directly westward of this point, there stretches a barren sandy waste for several days' journey. Here the *Eremophila* again made its appearance, more numerously even than in the Kansas plains, and here I first saw *Ægialites montanus.* A little further on, as we approached Fort Wingate and the Zuni range of the Sierra Madré, the country is more fertile and watered, and I encountered *Poospiza bilineata* and the lovely little *Chrysomitris mexicana* (of which I shall have more to say anon), also the *Myiarchus mexicanus.*

I have been much puzzled by the specimens of *Chordiles* from different regions. The large and light-coloured ones about Missouri and Kansas I had little trouble in referring to *C. henryi.* When in Santa Fé and throughout New Mexico, however, all I saw struck me as being unusually small, and yet, on shooting them, I could not see in what way they differed from *C. virginianus.* They certainly were not *C. henryi.*

Proceeding westward from Fort Wingate, we immediately crossed the "Continental Backbone" at the Zuni Pass, and shortly afterwards entered Arizona. As the avifauna of the rest of the journey hardly differs from that proper to Fort Whipple itself, I will proceed at once to notice the latter.

Fort Whipple is situated about midway between the 34th and 35th parallels of north latitude, and some sixty miles a little to the south of west from the celebrated San Francisco Mountains. To the south and west the vicinity is broken and mountainous, successive tiers of pine-covered elevations rising to from 8,000 to 10,000 feet. Northward and eastward the country is more open and bare for many miles. The average altitude of the place is just about 7500 feet. We are within the great belt of the *Coniferæ,* pines being the characteristic *Sylva.* The mountains proper are covered with *Abies douglasi, Pinus edulis,* and several other species. On the open and rocky or barren hill-sides we have three species of dwarf oaks—rather bushes than trees—*Algarobia glandulosa, Obione canescens, Arctostaphylus tomentosa, Agave americana, Juniperus pachyderma,* and many *Cactaceæ* of the genera *Opuntia, Cereus, Mammillana, Echinocactus,* and *Yucca.* The numerous mountain ravines coalesce into what is locally known as Granite Creek, one of the heads of the San Francisco river, a tributary of the Gila. The bottoms of these ravines are dry, except during heavy storms. Their beds and banks are covered thickly with a growth of *Populus, Salix, Juglans, Cerasus, Vitis,* &c. The open plains are either dry and sandy, or covered with 'Gramma' and other grasses.

Among the large game-mammals of the region are to be enumerated *Ursus horribilis, U. americanus,* with its variety *cinnamomeus, Cervus macrotis* and *C. virginianus, Ovis montana, Canis* *occidentalis* var. *mexicanus,* and *C. latrans,* and doubtless certain of the *Felidæ,* besides *Gulo luscus* and some species of *Mephitis* and *Putorius,* though I have met with none of these latter. Among the smaller mammals we have *Erethizon dorsatum, Lepus californicus, L. artemisiæ, Sciurus aberti, Tamias dorsalis, Thomomys fulvus, Dipodomys ordii,* &c. The last-named species is the most abundant and characteristic of all. Species of *Spermophilus, Perognathus, Rhithodon, Arvicola,* and *Hesperomys* will doubtless be detected.

And now as to the birds, from which I have digressed in order to give a more complete view of the natural-history features of the place where I am at work. It will be seen at a glance from the character of the vicinity, as regards the almost total want of water in the shape of streams or lakes, that the avifauna is cut down at once to the land-birds alone, and also that the mountain-haunting species are chiefly represented. To this I may add that the locality is sufficiently near the Pacific coast for its *Ornis* to incline decidedly towards that of corresponding regions in California. The list which I give is necessarily very incomplete, and it must be remembered that it is the result of less than four months' investigation; but it will, I think, afford a pretty good general idea of the avifauna, and show how rich a region this is both as regards quantity and quality of its species. Many birds as yet rare in collections are the very commonest here. Since the 10th of August, when I began to collect, I have been able to procure about six hundred specimens. I regret having to furnish a list in which certain of the species are only approximately identified; but I am without a single book to aid me, and therefore am obliged to trust entirely to memory. This must be my excuse for the deficiencies which are evident, as well as for any errors that may hereafter be detected.

Cathartes aura is abundant here, as at every point of my route, but towards the latter part of October the species entirely left us. *Hypotriorchis columbarius* is not uncommon; *Tinnunculus sparverius* is very numerous; while *Accipiter mexicanus, Circus hudsonius,* and *Buteo montanus* are very common. Several other species of *Buteo* are found here, but I have not been able to procure specimens, though I have in my collection a nearly black *Buteo* which I cannot identify. *Aquila canadensis* is not uncommon.

Strix americana is rare. Of other Owls I saw one specimen, which I judged to belong to the recently-described *Syrnium occidentale* of Mr. Xantus. I have several examples of *Glaucidium gnoma,* which is apparently not uncommon. This species does not hesitate to come abroad in daytime, and I always find their stomachs full of beetles, grasshoppers, and small lizards.

Picus harrisi vies with *Melanerpes formicivorus* for the supremacy, as the commonest and most characteristic species of Woodpecker. *P. gairdneri* I find, to my surprise, to be very rare here, and I have only met with one or two. I have a specimen of a *Centurus* which I cannot identify, for it seems to be neither *C. flaviventris* nor *C. uropygialis*; it was shot feeding upon the Petahaya-cactus (*Cereus giganticus*). *Melanerpes formicivorus* is probably the very commonest Woodpecker of all. In this region it is exclusively *pinicoline.* I have been much interested in noting the extraordinary variation in the colour of its irides. They are usually described as white, but I have found very few of this colour. Usually they are of a delicate pink or creamy-white—just the hue of the under parts of the *Crœcocephaloid* Gulls in spring. Birds of the year have the iris generally bluish-white or pale greyish-blue, but I have also seen the eyes of a clear yellow or brown. *M. torquatus* is very common, and is in moult until November. Its iris is dark brown. *Sphyrapicus nuchalis, S. williamsoni* and *S. thyroideus* are also found here; the first is very common and found everywhere, but seems to prefer live cotton-wood trees and willows; the last two are rarer and almost exclusively *pinicoline.* The genus *Sphyrapicus* is an exceedingly well-marked and natural one. All the species are rather xylophagous than insectivorous. The tongue can be protruded but a very little way beyond the tip of the bill, owing to the extreme abbreviation of the cerato-hyals, the apices of which hardly extend beyond the tympano-maxillary articulation. The horny portion of the tongue, supported on the glosso-hyal, is broad, flat, and obtusely rounded at the extremity, and thickly covered with soft hairs, instead of being, as in other *Picidæ,* acutely pointed and barbed. The species of this group are the true "Sap-suckers," which have brought all Woodpeckers into ill repute among American farmers. They almost always frequent live trees, and feed upon the soft inner bark itself rather than upon insects. *Colaptes mexicanus* is very common here. The tongue in this genus is capable of protrusion far beyond that of any other North American Woodpeckers.

Selasphorus rufus is very abundant here in summer, and until October. I think I have also *S. platycercus* in my collection.

I have not yet detected *Panyptila melanoleuca* at Fort Whipple, but on the road, just after crossing the Zuni Mountains, I saw great numbers of them about some high cliffs, in company with Bank- and Cliff-Swallows. I shall doubtless find the species here.

Ceryle alcyon I have once seen.

Tyrannus vociferans is very numerous as a summer resident, breeding abundantly. Early in October it left us entirely, as did *Myiarchus mexicanus,* which is also very common. *Sayornis sayus* is rare. *Contopus richardsoni,* or at least the species I noticed in the Rio Grande and took for that, is a summer resident exceedingly abundant. *Empidonax pusillus* is rather rare, while *E. flaviventris* var. *difficilis* is common. Of *Pyrocephalus rubineus* I have one specimen. *Myiadestes townsendi* and *Phænopepla nitens* are rare.

Of *Hylocichla nana* one specimen has been obtained. *Planesticus migratorius* is common in spring and fall. *Sialia mexicana* is very abundant, while *S. arctica* is much less numerous. In autumn *Regulus calendula* is very common.

Anthus ludovicianus is abundant in the fall.

Geothlypis trichas is common, but *G. macgillivrayi* rare. *Icteria longicauda* is a summer resident, and not uncommon. Of the Warblers we have *Dendrœca auduboni, D. townsendi, D. occidentalis,* and *D. nigrescens.* The first I only found after autumn had set in; the last three are among the summer birds, *D. nigrescens* being the rarest. *D. æstiva* is undoubtedly to be found here, and perhaps *D. virens* and *D. superciliosa* also. *Myiodioctes pusillus* is very common.

Cotyle serripennis is not uncommon. *Hirundo lunifrons, Herse thalassina,* and *Progne purpurea* are abundant. The last two in this country live among high pines, and nestle in old Woodpeckers' holes.

Of *Collyrio excubitoroides* I have one specimen. *Vireo swainsoni* is not uncommon in summer; concerning its validity as a species distinct from *V. gilvus,* see Professor Baird's remarks in his 'Birds of North America,' under the title of this last-named bird. Another *Vireo,* which is the most abundant in summer, I refer, with some hesitation, to *V. solitarius.* My numerous specimens come nearer to that species than to any other with which I am acquainted. I have not yet found *V. atricapillus,* but I am close to the locality whence it was first procured by Dr. Woodhouse, and I have no doubt of obtaining it in time.

Oreoscoptes montanus is common. Hitherto I have not found *Mimus polyglottus*; and I have been much surprised at not discovering a single *Harporhynchus* of any species. *Salpinctus obsoletus* is rather uncommon.

Thryothorus bewicki is rare; *Cistothorus palustris* and *Troglodytes parkmanni* are common. *Lophophanes wollweberi* and *L. inornatus* are abundant, the former especially so, and resident all the year. A species of *Psaltriparus,* which I cannot positively identify, but which is probably *P. plumbeus,* is very abundant, and resident all the year. In fall it occurs in large companies of fifty or more. The irides of some individuals are light yellow, of others dark brown. A species of *Polioptila,* either *melanura* or *plumbea,* is not rare.

Eremophila cornuta is common.

Carpodacus californicus and *C. cassini* are not rare, the first indeed is common. *C. frontalis,* I think, is not found here. *Chrysomitris mexicana* is a characteristic bird, being quite as abundant as *C. tristis* is in the east. Numerous specimens of another species, which with much hesitation I am inclined to identify with *C. lawrencii,* were procured late in the fall. If they are really what I take them to be, they are in a plumage hitherto unknown to me. *Passerculus alaudinus* and *Poœcetes gramineus* are common, particularly the first. *Chondestes grammica* is very abundant, and in the fall *Zonotrichia gambeli* is exceedingly numerous. Of the last, a few winter here. *Poospiza bilineata* is very common, and *P. belli* not rare. *Spizella pallida* is rather uncommon, but I have besides certainly one [*vide anteà,* p. 118], and I think also a second, new species of this genus. However, I shall not describe them until, while working up the general results of my investigations, the opportunity of making careful comparisons is afforded me. *Melospiza melodia*—or it may be that my specimens are *M. heermanni*—is common; *Cyanospiza amœna* is rather rare; while *Guiraca melanocephala* is very common in summer. In the fall, *Pipilo chlorurus* is very common; but one of the chestnut and black species of the genus, probably *P. arcticus,* is abundant all the year round.

Molothrus pecoris is doubtless to be found. *Agelæus phœniceus* and *Scolecophagus cyanocephalus* associate together, and are exceedingly numerous, the latter, especially in the fall, about the town and Fort. *Xanthocephalus icterocephalus* is common; but *Sturnella neglecta* just the reverse.

Ravens, probably *Corvus cacolotl,* perhaps *C. carnivorus,* are exceedingly numerous around the Fort. *Cyanocitta woodhousii* is the most abundant and characteristic Jay, but *Cyanura macrolopha* and *Gymnocitta cyanocephala* are also very common. The last I have seen in flocks of several hundreds. These three are the only Garruline birds of the region, so far as I have yet ascertained. *Columba fasciata* is rare; *Melopelia leucoptera* is not uncommon; while *Zenaidura carolinensis* is very abundant.

Lophortyx californicus is the Quail of these regions. Arriving here in July, I have had ample opportunities of studying the species from the egg to the adult bird. *Meleagris mexicana* is rather rare, and occurs only in secluded places among the mountains. I have been surprised at the apparently total absence of Grouse of any species.

Of water-birds, I have seen or procured here so very few species, that it is hardly worth while mentioning them. An occasional *Ægialites,* with *Numenius longirostris, Ibis ordii,* and several Ducks complete the assortment.

I should like much to go a little more into detail, as I have enjoyed excellent opportunities of studying the habits of many species regarding which very little is as yet known; but I have already reached the limits of an ordinary contribution. On another occasion I may perhaps have something of greater interest to communicate.

Fort Whipple, Arizona,
November 15, 1864.

XVII.—*Notes on the Ornithology of Spain.*

By Lord Lilford, F.L.S., F.Z.S.

(Plate V.)

The birds of Spain appear to be less known than those of any other part of Europe of equal extent. The only authorities on the subject to which I am able to refer are, Captain Widdrington[*], Dr. A. E. Brehm[†], Mr. Bury[‡], Don Antonio Machado[§], and two or three contributors to the 'Journal of Arts and Sciences of Madrid.' In my two short visits to Spain, I have of course not been able to acquire sufficient knowledge of her avifauna to write with any authority on the subject; but having taken careful notes of all that I did see, I am inclined to think that the result of my observations may prove of interest to some of the readers of the 'Ibis.'

My first visit to the country was in August 1856, in the Royal Yacht Squadron's schooner 'Claymore'; on which occasion, sailing from Falmouth, we first touched at Corunna, and thence, avoiding Portugal on account of the cholera which was raging at Lisbon, we sailed to Cadiz and all the principal Spanish ports on the Mediterranean, including Palma and Port Mahon in the Balearic Islands. As we merely stayed a few days at each place, and the weather was intensely hot, my opportunities for studying birds were not many; but I saw enough to render me very anxious to revisit Spain, and I may add that, to my mind, a more interesting country in every way can hardly exist. A second visit in the spring of 1864 only confirmed my previous favourable impression of Spain, her people, her climate, her beauties of nature and art, and last, but by no means least in my opinion, her ornithological capabilities. As may be expected in a country so extensive and of such diversified geological conformation, no observations on natural productions can apply to all parts; and I may state that my own notes refer almost exclusively to Andalucia and the neighbourhood of Valencia, which localities in birds are probably richer than, or at least as rich as, any in the country. I only speak of the other provinces on the authority of others; for instance, Señor M. de la Paz Graells, Curator of the Natural History department at the Museum of Madrid; and Señor Cisternas, who fills the same place at that of Valencia. Many portions of the interior of Spain, such as La Mancha, and parts of Murcia and the Castiles, are unfavourable to all but a few forms of bird life, being arid and treeless; but even in these regions the observer may meet with species rare in other parts of Europe, such as the two species of Sand-Grouse, *Pterocles arenarius* and *P. alchata,* and no doubt many other forms usually ascribed to the fauna of North America rather than to that of Europe. Before I visited Spain, which country, *par parenthèse,* had always been the subject of my youthful day and night dreams, I was assured by many of my acquaintances (I cannot call them friends) that not only was there nothing to be had there in the way of sport, but that there were literally *no* birds except Larks and Hoopoes; in fact, that the country possessed no attractions beyond a few ruins, some good pictures, the bull-fights, and the beauty of the female population. As to sport I can say little, never having been in Spain at the proper seasons; but I can speak as to the abundance and variety of game in the unfrequented districts; and I trust that the following notes will prove that Spain "has something still to show" in the way of birds, although it certainly is true that, in travelling by rail or diligence, very few are to be seen throughout a great extent of country. I suppose I must make a clean breast of it, and plead guilty to an infatuation in favour of everything Spanish, except her bonds and coupons; but I have at all events good argument for this weakness, if weakness it be, having made many friends, and shaken off a bitter enemy, viz. rheumatism, in Spain; and ill would it become me not to bear testimony to the extreme courtesy I have met with from all classes; to the great pleasure I have experienced in listening to, reading, and learning the glorious language, and the enjoyment of riding over the fragrant *dehesas* and rugged *sierras* of Andalucia. Even the *gazpacho* and *olla* have a charm for me; and I aver that the flavour of garlic recalls to my mind many a pleasant evening passed in divers Spanish ventas listening to stories of *la caza mayor y menor*, and inquiring and learning many things concerning the haunts and habits of my feathered friends. But I am forgetting that this paper is not intended as a eulogy of Spain and the Spaniards, but an attempt to add to our knowledge of her ornithology; so I will begin at the beginning, and tell what I know about the Birds of Prey.

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[*] Sketches in Spain. By Capt. S. E. Cook. London and Paris: 1834.

[†] Naturhistorische Zeitung, vol. iii. Dresden: 1857.

[‡] Zoologist, 1848, p. 1958.

[§] Catalogo de las aves observadas en algunas provincias de Andalucia. Sevilla: 1854.

My first introduction to the Griffon Vulture (*Gyps fulvus* ? *occidentalis*) in his native haunts took place on the banks of the Guadalquivir below Seville, where we saw a party of at least forty of these birds regaling upon a dead horse; they took very little notice of the steamer, apparently knowing that, on account of the shoal water, they were just out of gunshot. I have since met with this Vulture in all parts of Spain which I have visited, in great abundance, particularly in April 1864, in the Sierra de la Palmitera near Marbella, where we were encamped for two days in pursuit of Ibex (*Capra hispanica*). I cannot take upon myself to say whether the Griffon Vulture of Southern Spain belongs to the form *occidentalis* of Schlegel; but I imagine that it does, as all the individuals that I have seen there present precisely the same characters as the Griffons of the island of Sardinia, which I find Count Salvadori, in his most interesting Catalogue*, refers without hesitation to that race. I may here mention that by far the majority of the Griffon Vultures of Epirus are extremely light in colour, and, I think, somewhat superior in size to those of Spain and Sardinia. Brehm states that all the specimens of this Vulture which he saw in Spain belonged to the *occidentalis* form. The Spaniards call all the large Vultures *Buitre*, occasionally distinguishing the present species as *Buitre franciscano* from the Cinereous Vulture (*Vultur monachus*), which they term *Buitre negro*; this last species is not uncommon in Andalucia, though not so abundant as in the island of Sardinia, where it is perhaps the most frequent of the *Vulturidæ*. I observed a pair or two in company with the Griffons, in the mountains near Marbella, as mentioned above, and near Cordova I several times observed it. This bird appears to be more fond of trees than the last species, and apparently does not live in such large companies. Señor Graells informed me that *V. monachus* is not uncommon in the neighbourhood of Madrid, and it also occurs in the Pyrenees. Every specimen of this Vulture that I have seen alive or dead has the points of the tail-feathers worn bare to the shafts, a characteristic which may be seen very distinctly when the bird is soaring overhead against the clear blue sky of Andalucia or Sardinia. I may here mention that I was assured that this vulture, in Sardinia, does not lay till the end of March, whilst *G. fulvus* certainly has eggs in February. I state this only on the authority of the Sarde shepherds, who are naturally well acquainted with both species.

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* Catalogo degli Uccelli di Sardegna. Milano: 1864.

A fine adult pair of Lämmergeyers (*Gypaetus occidentalis*) visited the neighbourhood of our camp near Marbella in April. The Cazadores assured me that this species often drives the Ibex over a precipice, and feasts upon the bones after the other Vultures have devoured the flesh. The mountain-chains of Andalucia are well adapted to the habits of this bird; and, although it cannot properly be called a common bird, it is found in pairs throughout the Serrania de Ronda, as also in the Sierra Nevada, and in the Pyrenees. There is a very fine specimen in the University Museum of Valencia, which was killed close to that city—a very unlikely locality, as the surrounding country is flat and richly cultivated. Machado mentions this bird as rare in the Sierra Morena; but as he also states that *Caprimulgus europæus* haunts the tobacco-manufactory at Seville in great numbers, I think we need not place any great amount of faith on his powers of observation; in fact, it is very unusual to meet any Spaniard who cares for, or occupies himself about, any branch of Natural History, and any bird they do not see every day is to them a wonder. I believe the Lämmergeyer of Spain undoubtedly belongs to the race *occidentalis* of Schlegel; though, if size is to be considered as a real distinction, the Andalucian bird fully equals the largest I ever saw in Turkey, or the Italian Alps. The Spaniards call this species *Quebrantahuesos*, i. e. Bone-cracker; I have also heard it called *Aguila*; but it is a well-known bird in its mountain haunts, and generally distinguished by the shepherds and Cazadores by the first-mentioned name.

All the specimens which I saw in Spain had the breast conspicuously tawny-red. I cannot help still thinking that some of the birds of this genus, which I saw in Epirus*, were of a new species, from their remarkably small size and certain differences of flight, &c., although there is no doubt that the true *G. barbatus* occurs frequently in those parts. I was told of the existence of two eyries of *Quebrantahuesos* in the mountains of Istan, in Andalucia (this was in April); my informant added that they had not laid! and as I unfortunately do not possess the rock-climbing skill of certain brothers of the 'Ibis,' and felt convinced that no inducement would persuade the natives to attempt a siege, I did not go out of my way to inspect the localities. The Lämmergeyer appears to live on terms of distant courtesy with his neighbours, the Griffon Vultures; he evidently is not of a sociable nature, though doubtless he possesses many domestic virtues, and seldom travels, or even goes out to dine, unaccompanied by his mate.

I have generally found that the lower orders in Spain refer the inquirer to the province of Estremadura for every beast or bird concerning which they know little or nothing. "En Estremadura hay muchos," has been said to me about almost every bird of the country—the truth being, I suppose, that Estremadura is comparatively little known, and contains a great expanse of uninhabited wastes and forests which are apparently, as yet, quite as little known, ornithologically, as the parts beyond Jordan, before the explorations of Mr. Tristram and his friends. It is difficult to understand why Spain should be so little known to naturalists: there is no real difficulty or danger in visiting every corner of the land, and there can, I imagine, be few countries which so well repay any slight amount of discomfort in the way of bad accommodation, number of bed-fellows, and the like. I can state on my word of honour, that the flea of Spain is a trifle when compared to his cousin of Sardinia, and both sink into insignificance before him of Tunis. But again I am forgetting myself, and must bear in mind that, although it is difficult to travel in Spain without becoming in some degree acquainted with the insect-world, I am not writing an entomological paper.

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* Ibis, 1860, p. 2.

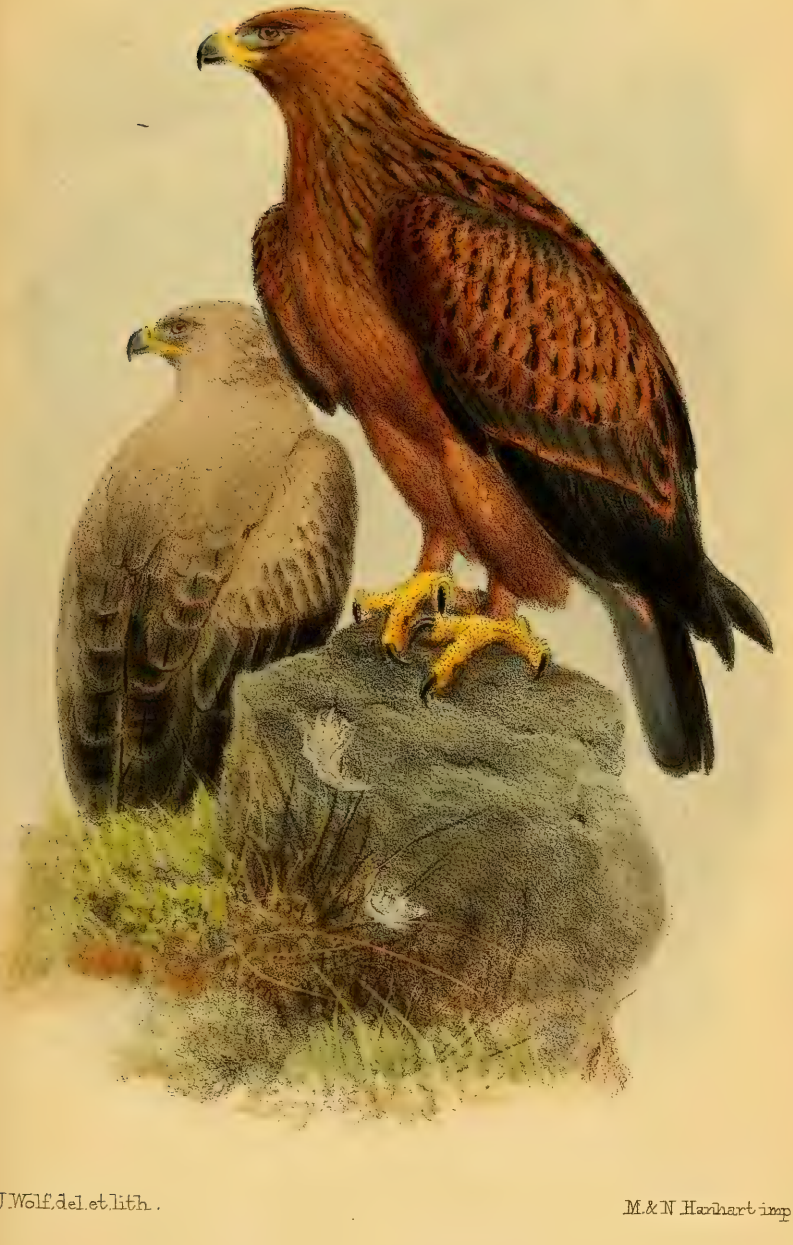
The Egyptian Vulture (*Neophron percnopterus*) is very common in Andalucia, and probably all other parts of Spain, in the summer, and follows the plough, as observed by Captain Widdrington. In fact, during my last visit to Andalucia, in almost every instance, when I observed ploughing, there were a pair or more of these Vultures waiting about, and picking up the grubs turned up by the ploughshare. They are very fearless of man, and are conspicuous objects against the tawny-brown hills so characteristic of Southern Spanish scenery. The Spanish name for this species is *Alimocha* or *Aguila blanca.*

Eagles of many species abound in Andalucia, one of the most common being the Imperial (*Aquila heliaca*), called in Spanish *Aguila real.* I often saw this bird last year in the neighbourhood of Seville; the museum there contains several specimens, and I was offered a fine individual alive, in full adult plumage and in pretty good feather, though he was kept chained at the top of his owner's house in an appartment usually devoted, I fancy, to anything but birds. I very much regretted that I was not able to accept him, but as I was travelling about the country I could not well carry him with me, and most reluctantly left him to his fate. Brehm mentions this species as occasionally found near Madrid, where I obtained a good specimen in May 1864. The Imperial Eagle appears to be rare in the east of Spain, as it is not to be found in the collection of the Museum of Valencia, nor could I hear of it at Barcelona, Alicante, or Cartagena.

The Golden Eagle (*Aquila chrysaetus*) is certainly less common in Andalucia than the last-mentioned species. I have observed it near Granada, and all the collections I have seen in Spain contain specimens. I know nothing of the *Aquila fuscicapilla* of Brehm. A Golden Eagle crossed the road not more than thirty yards ahead of me, in hot pursuit of a Little Bustard (*Otis tetrax*), as I was riding from Alcalá la Real to Castro del Rio, in April 1864. I shouted and rode at him, and saved the life of the Bustard, at all events for some time, as the Eagle sailed indignantly off, and the quarry plunged into a field of standing wheat. The White-tailed Eagle (*Haliæetus albicilla*) I never saw alive in Spain, but Señor Graells has met with it more than once in, I think, New Castile. I have also heard of its occurrence near Valencia.

The Spotted Eagle (*Aquila nævia*) appears to be rare in Spain, and I never saw it alive in any part of the country. The Seville Museum contained a fine specimen, and I found another in the collection at Valencia. I cannot find any mention of this species in any of the Spanish catalogues of the birds of Andalucia or Valencia, nor is it noticed by Brehm.

Of the subject of the accompanying Plate (Plate V.), the Tawny Eagle (*Aquila nævioides*), I find no mention in any work on Spain to which I have been able to refer, nor did I meet with it in any collection in that country; but I am quite certain that I have seen it several times in Andalucia—notably, near one of the stations on the railway between Seville and Cadiz, and again near Cordova, in April 1864. On the first occasion, an Eagle rose from the railway embankment and settled in a tree within forty yards of me, which Eagle, at first sight, puzzled me considerably; it was exactly in the plumage of the upper figure in the Plate, which, so far as I am aware, does not belong to any other Eagle, unless, perhaps, to *Aquila heliaca*. But this bird was considerably smaller than that species, of which I saw two on the same day in immature plumage; nor, indeed, do I recollect having seen a specimen of the Imperial Eagle so uniform in colouring. I made the acquaintance of *Aquila nævioides* at Tunis, where it is frequent; and I have, at the present time, three of this species alive in my possession, from two of which Mr. Wolf took the sketches for the Plate. The darker bird I have had for nearly three years, and he or she (for I am ignorant of the sex) has altered very little in appearance during that time, though the dark markings have, I think, somewhat increased in breadth and number. The light-coloured specimen, which I obtained last year, I consider to be an immature bird, and, from its small size, it is, I think, a male. Mr. J. H. Gurney informs me that he received two specimens of *Aquila nævioides* from Spain, which are now in the Norwich Museum; and I have no doubt that, though hitherto unnoticed, it is not uncommon in the south of that country. It is found in the neighbourhood of Tangier, and my three living birds were all said to have been



J. Wolf. del. et. lith.

M. & N. Hanhart imp

AQUILA NAEVIOIDES.

received from Mogador. Mr. Gurney states that the Eagle procured by Captain Blakiston in the Crimea, upon whose authority Dr. Bree has introduced *Aquila nævioides* into his 'Birds of Europe'*, is, in fact, a specimen of *Aquila nævia*; so that the only recorded occurrence of this Eagle in Europe, besides those mentioned above as received by Mr. Gurney from Spain, is, so far as I know, to be found in the 'Revue et Magasin de Zoologie' for 1854 (pp. 8 and 351); but in the same volume (p. 160) it will be also found that the accuracy of the statement referred to is disputed, and the supposed two specimens of *Aquila nævioides* are made out to belong to another species. My birds are remarkably tame, and live in amity with each other, and with a fine adult Bonelli's Eagle (*Aquila bonellii*), which I have kept alive for nearly five years. This last-named Eagle is common in Andalucia, where it frequents the marshes, as observed in Epirus† and Sardinia. The Seville Museum contains several specimens; and it is mentioned by Brehm as observed in the provinces of Valencia, Marcia, Granada, and Madrid. I was informed that one of the specimens which I saw stuffed at Seville was caught upon its nest in a pine-tree, not far from that city; but on my inquiring what had become of the eggs, the usual "quien sabe?" was all the answer I could obtain.

Bonelli's Eagle is almost always to be found in pairs, and has a very different flight from that of any other European Eagle; it is known in Andalucia as *Perdicero* and *Aguila blanca*, which last appellation is indeed given to many other species, and particularly to the Booted Eagle (*Aquila pennata*), which is very common near Seville, and is, I believe, found in most parts of Spain: the Museums of Madrid, Granada, Seville, and Valencia contain many specimens. Señor Graells informed me that the Booted Eagle breeds in May, in the neighbourhood of Madrid, and usually places its nest on a poplar; in the country round Seville it builds in the Pinares or pine-groves, and is reported to lay only two eggs, of a dirty-white colour with indistinct rufous markings. This information was given me by a sportsman of Seville, who said he had often seen the nest and eggs of this species, and certainly *did* know the bird well, distinguishing it at once from the Buzzards and Kites by its feathered legs, and remarking truly, "no hay otra aguila tan pequeña." No one, I think, who has ever seen this Eagle on the wing can mistake it for a Buzzard, as its flight is very different, and its cry, frequently repeated, as unlike the wail of a *Buteo* as possible. It appears to prefer open country and isolated groups of trees to large extents of forest. The natives told me that this Eagle is the scourge of the Quails which abound in Andalucia. It is no doubt the bird referred to by Señor Machado as *Falco lagopus,* as all the specimens which I saw in the Museum of Seville under his charge were ticketed with that name; he gives *Milano blanco* as the common Spanish name for *Aquila pennata*; but my own experience goes to prove that that name is generally applied to the male Hen-Harrier (*Circus cyaneus*). I find no mention of the Booted Eagle in a catalogue of the birds of Santiago and other parts of Galicia. I once saw the Short-toed Eagle (*Circaetus gallicus*) soaring in the air near Figueras in Catalonia; and a bird-stuffer at Barcelona had a fine specimen alive, but badly wounded, which was obtained in that neighbourhood. I saw this species in the Museum of Madrid, but Señor Graells informed me that it is not common in Castile. The Osprey (*Pandion haliæetus*) I never saw alive in Spain, but it occurs occasionally at Valencia.

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* Ibis, 1859, p. 88.

† Ibis, 1860, p. 5.

The Peregrine Falcon (*Falco peregrinus*), in Spanish *Halcon,* I saw several times about the Guadalquivir below Seville, and again in Minorca; in which last locality I observed what was evidently a family party of five individuals in October 1856. This was close to the town of Port Mahon. I notice that Brehm mentions *Falco peregrinoides,* Temm., as occurring in Spain; and if, as I think, Temminck's bird is identical with *Falco barbarus,* I have strong grounds for believing that Brehm is right.

All the Falcons I saw in the south of Spain were notably smaller than an average Peregrine; and I well remember remarking that it was curious that I should see nothing but male birds, as they seemed to be. A specimen of Temminck's *Falco peregrinoides* exists, according to Brehm, in the Museum of Granada, and another in a private collection at Murcia. I am not aware that *F. barbarus* has as yet been admitted into the list of European birds; but I feel little doubt that the Common Falcon of Southern Spain belongs to that form, though the real *F. peregrinus* also occurs, as, for instance, as mentioned above, in the island of Minorca. I was assured by Señor Graells that the Lanner (*Falco lanarius*) and La Marmora's Falcon (*Hypotriorchis eleanoræ*) have to his knowledge occurred in Spain—the former species in Catalonia, and, I think, the latter in Murcia or Valencia. For particulars of Brehm's *Falco gracilis* I must refer my readers to that author's account of the Birds of Spain, published in the 'Naturhistorische Zeitung,' merely stating, as my own opinion, that this *F. gracilis* is only *Hypotriorchis eleanoræ* in one of its many now well-known variations of plumage. The Hobby (*Hyptriorchis subbuteo*) is not uncommon in Andalucia, where I have several times seen it, and is found more or less commonly throughout Spain during the summer. The Orange-legged Hobby (*Erythropus vespertinus*) I saw once in Andalucia, and there is a specimen in the Museum of Valencia, but it is not, I think, a common bird in any part of Spain.

The two species of Kestrel, *Falco tinnunculus* and *F. tinnunculoides*, are, I think, in April and May, the commonest birds in Andalucia, with perhaps the exception of the Bee-eater (*Merops apiaster*). Every church-steeple, belfry, and tower, every town and village, every ruin swarms with them; I believe I am not at all beyond the mark in saying that I have seen three or four hundred on wing at the same moment on more than one occasion, particularly at Castro del Rio in April 1864. I think the Little Kestrel is somewhat the most abundant of the two species. The cry of these pretty birds is as certain to strike the ear in the towns of Andalucia, as the twang of the guitar and click of the castanets. Both species of Kestrel continue on wing long after dark. In the delicious summer nights of Southern Spain, when all the louder sounds of human life are hushed, and nothing breaks the silence but the monotonous note of the little Scops Owl, and the "wet my lips" of innumerable Quails, I have occasionally been roused from a reverie by the cry of the Kestrels over my head, seemingly passing and repassing, and carrying on their usual evolutions in spite of the darkness. Whilst on this subject, may I ask if any of my readers have ever remarked the extraordinary cries of birds during the night? It has happened to me on several occasions after dark, in different parts of Europe, to hear very large flights of birds, with whose notes (in the majority of instances) I was totally unacquainted, pass over at no great distance. Once, in one of the quadrangles of Christ-Church, Oxford, I listened for at least ten minutes to the continuous cry of a flock of birds—which cry I can only liken, and that very slightly, to the screech of the Night-Heron (*Nycticorax griseus*). Again, on the Esplanade at Corfu, in the summer of 1858, my companion and I were suddenly startled from the somewhat drowsy contemplation of our cigarettes by an uproar as if all the feathered inhabitants of the great Acherusian marsh had met in conflict over our heads: this took place in July, about 1 A.M., when we were lengthening our days according to Tom Moore's well-known precept. It would be quite impossible to convey anything approaching to a just idea of the Babel of sounds, many of which neither of us had ever before heard; and I have no conception what birds can have produced the greater part of them; but I recognized the wail of the Curlew, the cry of more than one species of Tern, and the laugh of some *Larus*. In Southern Spain the Lesser Kestrel occasionally remains through the winter, but the greater number leave the country about October, and reappear in April. The Spaniards call the Common Kestrel *Cernicalo*, and the Lesser *Primilla* or *Buaro*: this latter name is sometimes applied to the Hobby also. The Merlin (*Falco æsalon*), in Spanish *Esmerejon*, is common in winter, and well known throughout Spain

I have once or twice seen the Gos-Hawk (*Astur palumbarius*) in Andalucia, and also in Catalonia. Brehm mentions that, although he never saw this species alive, he met with it in all the museums which he visited in Spain. The Spaniards call the Gos-Hawk *Azor*. The Sparrow-Hawk (*Accipiter nisus*) is common all over Spain, where it is known as *Gavilán*. The Common Buzzard (*Buteo vulgaris*) is often found in Andalucia, and, according to Brehm, in most other parts of Spain. I have reason to think that *Buteo desertorum* is to be found in Western Spain and Portugal, though I cannot at present state this with certainty. The Honey-Buzzard (*Pernis apivorus*) is common in most parts of Spain, on passage. I observed a flight of many hundreds of this species crossing the Straits of Gibraltar from Spain to Africa in September 1856, and I shortly afterwards obtained a fine specimen alive at Malaga. Vidal, in his 'Catalogue of the Birds of the Albufera of Valencia,' remarks that, although the Honey-Buzzard is very common there in its immature dress, it is extremely rare to meet with an adult specimen. I never heard of the Rough-legged Buzzard (*Archibuteo lagopus*) in Spain, except on the authority of Don A. Machado; and, as mentioned above, all the birds so named by him in the Museum of Seville are specimens of *Aquila pennata.* The Common and Black Kites, *Milvus ictinus* and *M. ater,* are common in Andalucia—the latter perhaps more so than the former, in the neighbourhood of Seville, where it nests in church-towers and ruins. Both species are well known to the country-people, who call them *Milano real* and *Milano negro.* I saw a beautiful adult specimen of the Black-winged Kite (*Elanus melanopterus*) in the hands of a bird-stuffer at Seville, in April 1865, which had been shot a few days previously in the *marisma* below Seville. It is certainly not a common species in Spain, and I did not meet with it in any museum. Of the Harriers, I distinctly made out our three British species on the Albufera of Valencia. The Marsh-Harrier (*Circus æruginosus*), in Spanish *Arpella,* is very common throughout Spain; the Hen-Harrier (*Circus cyaneus*) I often saw in the neighbourhood of Cordova, as also on the Guadalquivir below Seville. Montagu's Harrier (*Circus cineraceus*) is not, I think, common in Spain; there is a specimen in the Museum of Madrid. I did not meet with *Circus pallidus.* In conclusion, I may mention that I hope shortly to revisit Spain with the express purpose of making myself better acquainted with her ornithology; and I trust in some future Number of the 'Ibis' to be able to record my further experiences.

Lilford, March 1865.

XVIII. *On certain Facts in the Economy of the Cuckoo* (Cuculus canorus). By GEORGE DAWSON ROWLEY, M.A.

I HAVE lately made an analysis of the history of the Cuckoo (*Cuculus canorus*, L.) as given by various British authors, namely Yarrell, Morris, Gould, and Wood, and, lastly, of the article in the 'Naumannia' (1853, p. 307) by Dr. E. Baldamus. The latter appeared to contain matter of so much interest, that I obtained the assistance of a friend, and translated it. During the past year (1864) I received nineteen Cuckoos' eggs, most of which were seen by me *in situ*. In 1863 I obtained not quite so many; but in former years my opportunities have not been neglected. With these materials, and after much careful observation for many years and in a good locality, I venture to say a few words on the breeding of *Cuculus canorus*.

Yarrell says that "the earliest egg does not appear to be laid till the middle of May;" and Mr. Morris follows him in the same statement. Now, in the 'Ibis' for 1862 (p. 384), I recorded the fact that a fresh egg of the Cuckoo was found on the 5th of May of that year, in an otherwise eggless nest of *Fringilla chloris*, by a friend of mine, while hunting for nests in my company; and I have in my collection a series of specimens, with the nests in which they were deposited, from the date just mentioned down to the 19th of July 1864; on which day the nest of a Titlark (*Anthus pratensis*) was taken at Stanmer near Brighton, by a person on whom I can rely, which contained five eggs of that bird, and one of a Cuckoo, so small as hardly to exceed them in size by any perceptible difference. I have myself taken eggs of the Cuckoo in July; but the 19th is the latest date known to me. Hence I may fairly say that the period of laying, with this bird, extends from the beginning of May to the middle of July, as proved by facts which have come to my own observation.

Mr. Morris goes more into detail than any other author with whose books I am acquainted; and I find that many of my observations confirm his remarks. Mr. Gould, in his magnificent work on the 'Birds of Great Britain,' gives much information on the subject. He draws attention to the article in the 'Naumannia,' which I have mentioned above, but without passing an opinion on the theory it contains. Before the part of his work treating of the Cuckoo had reached me, I had already in some degree considered this article (*vide* 'Ibis,' 1862, pp. 384, 385), upon which I now propose to make a few remarks. Mr. Wood also appears to allude to it when he says that "the colour of the egg [in *Cuculus canorus*] varies with the species in whose nest it is to be placed."

The translation of Dr. Baldamus's article is too long to be inserted here, though it would be much more satisfactory if English readers had the opportunity of studying it in their own language. I must therefore content myself with giving one or two of his leading observations, and a statement of his final results. But now let me say that, though I am not at present convinced by his arguments, tending as they do to a conclusion quite contrary to my own experience, yet I cannot refrain from expressing my admiration at his researches, which of themselves bear witness to his reputation as an ornithologist. The theory is as beautiful as it is new, and I only wish that fresh evidence may be brought forward of a nature so strong as to make it an acknowledged fact. Till that, however, is the case, I am compelled to withhold my belief from it. After detailing his efforts to discover if the Cuckoo is polygamous, the author gives, from Thienemann, a list of the various species in the nests of which its egg has been found, as follows:—

Sylvia hortensis.
—— cinerea.
—— atricapilla ?
—— curruca.
—— tithys.
—— phœnicurus.
—— rubecula.
—— arundinacea.
—— palustris.
—— cariceti.
—— locustella.

Sylvia trochilus.
Accentor modularis.
Troglodytes vulgaris.
Saxicola rubetra.
Motacilla alba.
—— flava.
Anthus campestris.
—— pratensis.
Alauda arvensis.
Emberiza citrinella.

To these Dr. Baldamus is enabled, from other sources of information, to add:—

Lanius collurio.
Sylvia nisoria.
Luscinia luscinia.
Hypolais vulgaris.
Phyllopneuste rufa.
Calamoherpe turdina.
—— phragmitis.
Regulus flavicapillus.
Anthus arboreus.
Alauda cristata.
—— arborea.
Emberiza miliaria.
—— schœniclus.
Loxia chloris.
Linota cannabina.
Saxicola stapazina.

In addition to this list, I may also quote the evidence afforded by a nest of the Brambling (*Fringilla montifringilla*), received by me from Archangel, which contained five eggs of that bird, and one of the Cuckoo*.

Out of nests of the thirty-seven species mentioned above, Dr. Baldamus says he has obtained about one hundred eggs, collected by himself and his friends, so that he has "plenty of material." He then proceeds to give descriptions of these specimens; and the most astounding among them is that of a supposed Cuckoo's egg, found in the nest of *Accentor modularis,* without the usual spots of the former, but of a "fine blue-green colour." Now, I venture to ask, what proof exists, or can exist, other than the *hatching of the egg,* to convince an oologist that it was a veritable Cuckoo's? Was it not rather a monstrous variety of that of the *Accentor*? I have at this moment before me a sitting of five fresh eggs of *Salicaria arundinacea,* taken near the river Ouse, in Huntingdonshire, on the 10th of June 1864, by my father's game-keeper, a man of long-proved exactitude. The fifth, precisely like the others in colour and markings, is of the size of a small Cuckoo's egg in my collection; yet do I entertain the least doubt as to its origin? Certainly not. It is unquestionably an egg of *S. arundinacea.* I really am afraid to say how many eggs of Cuckoos' I have found in the nests of this bird in the course of my annual experience; but in no one instance can I trace the smallest resemblance, or tendency to resemblance, between the eggs of the two species. The same is the case with Cuckoos' eggs found in the nests of *Accentor modularis* and *Salicaria phragmitis,* of which I myself have discovered many. In one instance, on the 30th of June 1862, I found a remarkable Cuckoo's egg in a nest of *S. phragmitis,* together with two of that bird's. This differed much from the usual type of the Cuckoos' eggs found by me in the valley of the Huntingdonshire Ouse, round St. Neot's; but instead of the divergence in colour and markings approaching to those of *S. phragmitis,* the result was to make the difference much greater and more conspicuous.

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* The list of species which foster the Cuckoo might, we believe, be very much further extended. Without pretending to give an "exhaustive" list, we can add to those noticed above, on fair authority, *Passer domesticus.* Pallas (Zoogr. R.-Asiat. vol. i. p. 481) mentions *Cyanecula suecica*; Yarrell, *Anthus obscurus, Fringilla cœlebs,* and *Turdus merula*; Mr. Hewitson, in his last edition, *Locustella nævia* (Bodd.); while M. des Murs, in his great work (Oologie Ornithologique, p. 219), includes *Parus major, Anthus cervinus* (apparently, since he calls it "Pipit Rousseline", by mistake for *A. rufescens* sive *campestris,* already mentioned by Thienemann), *Acanthis linaria, Pyrrhula rubicilla, Garrulus glandarius, Turdus musicus,* a *Pica,* a *Turtur,* and a *Palumbus,* all among the birds to which the education of young Cuckoos is occasionally entrusted. We can entirely confirm Mr. Rowley's statement of Cuckoos' eggs being found in nests of *Fringilla montifringilla,* nearly half a dozen instances of such an occurrence being known to us.—Ed.

Of the cases quoted by Dr. Baldamus, that which rests on the strongest evidence is a Cuckoo's egg, in the nest of *Hypolais vulgaris,* resembling those of that bird. Herr Braune shot the Cuckoo when leaving the nest, and took out of her another egg, ready for exclusion, and similar in colour to the one deposited. This testimony appears to be strong, and I therefore cite it here; but I think that eggs taken out of a bird by dissection are not to be relied on as showing the matured colour. I do not, however, wish to underrate the value of this instance.

Another egg, described by Dr. Dehne ('Naumannia,' 1853, p. 203), was laid by a Cuckoo in a cage, and was destined, as Dr. Baldamus thinks "very likely," for the nest of *Ruticilla tithys.* Now we all know that the eggs produced by captive birds cannot in the least be depended upon. I have several very curious specimens which illustrate this point.

Dr. Baldamus says it is a fact without doubt "that there are Cuckoos' eggs which in colouring and marking are like the eggs of those *Sylviidæ* in whose nests they are laid," that nature has regulated these circumstances to "make easier the existence of the species" and that the *Sylviidæ* then become "blind" with regard to the Cuckoos' eggs. One would hardly think it necessary for Nature to do this, since we well know that most birds will lay to an egg of another species introduced into their nests, and frequently to a round stone, not to say a boy's marble; indeed I have observed a *Muscicapa grisola,* having lost her eggs, sitting hard for two days on an empty nest. The impulse to sit is so strong as to be very difficult to resist. I have frequently, and (so far as sitting goes) with success, changed the eggs of birds. Not long since I substituted three eggs of *Fringilla cœlebs* for the same number of a *Coccothraustes vulgaris,* to which the latter laid two more very contentedly. But I need not cite more examples, for similar instances have probably occurred to most oologists.

If, then, *Cuculus canorus* has this strange and (as I think) unnecessary property, does the same gift extend, under a similar necessity, to the equally parasitical *C. glandarius*? Unfortunately I have only one specimen of the egg of this species, sent with three companions, the property of *Corvus cornix.* One specimen certainly does not tell us much; but I see nothing to favour the supposition alleged. Again, does the Australian *Scythrops novæ-hollandiæ* deposit an egg in colour resembling that of *Gymnorhina tibicen**, which, according to Mr. Gould, is sometimes its foster-parent? The more honest habits of the Cuckoos of the New World prevent our getting any help from them.

The ingenious idea struck out by Dr. Baldamus, and recorded of old time of animals about to produce young, that strong and long-wearing impressions upon the senses affect the female bird with regard to the colour of her eggs, can hardly, I think, be entertained. It is true that the colouring is the last stage in the egg-making process; but how does a Cuckoo know what hue will be suitable, when she deposits her egg in an empty nest? That this is sometimes the case, I fully believe. I refer again to my nest (already mentioned) of the 5th of May 1862. But it may be said that, in that instance, the Cuckoo turned out all the eggs of the *Accentor* and only left her own. Now I have very frequently known the Cuckoo turn out some eggs, but never, according to my experience, have the whole been ejected.

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* Dr. George Bennett states (P. Z. S. 1861, p. 183) that the eggs of this species vary among themselves most remarkably.—Ed.

So violent a proceeding might defeat her end, by causing the desertion of the owner.

I have made notes of several cases where I have the best reason for saying that the Cuckoo turned out one egg with the intention of laying, and then, from some cause or other, did not ultimately insert her own—in short, prepared a nest, but perhaps had not an egg ready for exclusion at the time. For a long while this used to puzzle me much. I have frequently met with such a case; in fact, I do so every year. Last season I had watched a Cuckoo so closely, that I was positively certain she must lay somewhere near. I had also searched so much, that I felt sure there was no nest ready at hand except a Reed Bunting's (*Emberiza schœniclus*). To this I devoted myself, as for years past I have wished to obtain a Cuckoo's egg in the nest of this species, of which perhaps I annually look into some five-and-twenty, and that in a place frequented by Cuckoos. At last I said, when the Cuckoo hung round this tempting nest, that I must be sure of the specimen I wanted. Three Bunting's eggs were laid—the next morning there were only two to be found. The Cuckoo had, as usual, turned out one or two, but she, herself, would not lay, because, as I conclude, she did not like the species. The nest of this bird, which I should have thought very suitable, is, according to my experience, the one least used by the Cuckoo. Dr. Baldamus includes the species in his list; but, I believe, instances must be rather rare.

If I interpret Dr. Baldamus rightly, he says that all the eggs of one Cuckoo are the same in colour, and are all destined for the nests of one and the same species; but that these are often not ready, therefore the bird is compelled to dispose of them as may chance, and consequently to a disadvantage. In the valley of the Ouse, which I watch with great care, I know that the Cuckoo usually lays in the nests of *Salicaria arundinacea*, but very nearly as often in those of *S. phragmitis*, the contents of the two being, as all oologists are aware, very different. I have found two types of Cuckoo's eggs, laid, as I am nearly sure, by the same bird. Dr. Baldamus alleges that the eggs which do not agree with his theory are exceptional. I would suggest, however (and the numerous examples I have taken warrant the idea), that the Cuckoo's eggs, which differ in colour and marking from those of the owners of the nest in which they are found, are normal, while his specimens are accidental—in short, exactly the contrary to what he advances. Some of the figures which he gives in his plate ('Naumannia,' 1854, p. 415), I take to be simply monstrous eggs of the several birds in whose nests they were discovered. The author justly remarks that numbers prove a rule, and takes his stand upon his hundred specimens. I cannot now produce quite so many, but perhaps could nearly equal him in the number taken by our respective hands *in situ*.

Dr. Baldamus admits that the two types of coloration in the eggs of the Cuckoo, which are known to all oologists, namely the red type and the grey, are found in most localities; and, with some slight variation (induced, perhaps, by exhaustion or other similar physical causes), I cannot imagine any other sort of coloration. But if such polymorphism be found in eggs of the Cuckoo, they can scarcely surpass in variety the eggs of *Anthus arboreus*. For what purpose then, I may ask, was this most extraordinary variability given to the Tree-Pipit, which is certainly not a parasitical species?

The author concludes his most interesting and clever paper by laying down fourteen Canons, which I here repeat, adding to each my own comment upon it.

1. "The Cuckoo deposits its eggs for incubation with a great number of Warblers."—True.
2. "There are Cuckoos' eggs of such different coloration and marking, as are found in no other bird, so far as is known up to this time."—To this I do not agree.
3. "All the eggs of the Cuckoo, even those of the most varied colouring, find a resemblance, alike in coloration and marking, among those of the foster-parents."—I do not agree.
4. "Peculiar colouring prevails in different localities."—True.
5. "Each hen Cuckoo deposits only one egg in the same nest."—True.
6. "Eggs (as a rule) are deposited only in such nests as already contain eggs of the foster-parents."—Usually the case, but by no means always, as I believe.

7. "The same hen-bird deposits eggs of a like colour (as a rule) in nests of the same species."—Not always the case.
8 "The exceptions to the last four conclusions are proportionately rare."
9. "Most of the Warblers desert their nests readily, and in consequence of very slight disturbance."—True.
10. "They pursue and drive away the Cuckoo when it comes near them."—This leads to a contest, in which the eggs are sometimes broken.
11. "The Cuckoo avails herself of the absence of the old birds when depositing her egg in the nest."—Certainly.
12. "She lays her egg on the ground and conveys it with her beak into such nests as are otherwise inaccessible; but, when opportunity affords, she lays it in those that are easily accessible."—This I believe, but I myself have no actual experience of the matter.
13. "In consequence of this, she lays aside her usual shyness of buildings."—This I can confirm; I know of a young Cuckoo hatched in a cart-shed some years ago
14. "Two Cuckoo's eggs of different colours occur in the same nest. Whence we infer:—

"(1.) Nature must have an especial purpose in so many harmonious and peculiar contingences.

"(2.) This purpose is very easy to understand: under the arrangements originally hit upon, nature would make surer and easier the existence of the otherwise endangered species.

"(3.) Nature attains her purpose by very simple means. She has granted to each hen-Cuckoo the faculty of laying eggs, in colour similar to those of the birds whose nests she has, according to the locality, been accustomed to use; or, in other words, each hen-Cuckoo lays eggs of a certain colouring only, which corresponds with that of the eggs of some one species of Warbler, in the nests of which she deposits them, and she only puts them into the nests of other species when, at the time she is ready to lay, a nest of her (so to speak) typical species is not at hand."

To the inferences, from this fourteenth and last conclusion, I do not, of course, assent, except as to the fact of two eggs of different colourings being found in the same nest.

I would add, from my own experience, the following results:—

I. The period of laying, in the Cuckoo, extends from the 5th of May to the 19th of July, or nearly.

II. Traces of violence and a scuffle between the Cuckoo, at the time of deposition, and the owner of the nest often appear.

III. It is not usual to find the full complement of eggs of the proprietor in the nest after a Cuckoo has intruded hers. But sometimes the contrary occurs.

In exemplification of the above, I give the following list of nineteen nests containing Cuckoos' eggs known to me during the past year (1864):—

Date.	Name of owner.	No. of eggs of owner.	Remarks.
May 22.	Accentor modularis ...	3	On the 21st there were three eggs. Next day the Cuckoo laid; still only three eggs of the owner.
24.	" "	1	Contained one egg of the owner smashed (not sucked); the moss was torn, but the Cuckoo's egg sound and fresh.
30.	Salicaria arundinacea.	2	Incubated.
30.	" "	2	
June 1.	Motacilla yarrelli	4	I watched this from the first. It contained four eggs of the owner. The fifth was turned out, and lodged in the tree in which it was built.
3.	Anthus pratensis	5	
4.	Salicaria arundinacea...	2	
6.	" "	1	
8.	Accentor modularis ...	0	
9.	Salicaria arundinacea ..	3	
11.	" "	0	
13.	" " (?)	1	On the 12th it contained two eggs of owner. On the 13th it had only one, with a Cuckoo's added.
14.	" "	0	The Cuckoo's egg had sticking to it a portion of another Cuckoo's egg, exactly the same in colour and markings, whence I conclude there had been a battle between the two birds, when all the contents were broken, except one Cuckoo's egg—perhaps that of the victor.
15.	" "	1	
23.	Accentor modularis ...	1	
23.	Salicaria arundinacea ..	1	
25.	" "	2	
July 19.	Anthus pratensis	5	Incubated.
——	Motacilla yarrelli	—	This nest, built in a wood-stack, contained two Cuckoo's eggs, one red, the other grey.

XIX.—*The Sea-birds and Waders of the Pacific Coast of Guatemala.* By Osbert Salvin, M.A., F.L.S., &c.

In a previous Number of this Journal (Ibis, 1864, p. 372) I gave some account of the Sea-birds of British Honduras; following up the subject, I now propose to do the same for those of the Pacific Coast of Guatemala, combining with them a notice of such Waders as I observed, together with a few notes of what befell me in those out-of-the-way parts.

In the month of September 1862, Mr. Robert Owen and I, then travelling in company, found ourselves at Retaluleu, a town on the lowlands of the Pacific slope of the Cordillera. We had ridden there from Quezaltenango, a large town in the Altos, and the capital of a considerable district, all the corn-growing and sheep-producing highlands. The descent of 7000 feet to the coast-country, as it is commonly called, though still a long way from the sea, is all accomplished in a distance of about forty miles. We made the journey more with a view of exploring for some future expedition than with the hope of doing much at that time of year—the height of the rainy season. While staying at Retaluleu I heard accounts, which gave such glowing prospects of collecting fish from the lagoons of the coast, and of obtaining a number of birds I had heard of, but not seen, that, making all due allowance for exaggeration, I still thought I could not do better than turn my steps thither on the first opportunity, and at a more favourable season.

On the 8th of January 1863, I reached the port of San José de Guatemala to take a passage in the barque 'Vicuña,' which was going to Champerico, the "port" of that part of the coast I wished to visit, to take in a cargo of sugar and coffee. I was fortunate in meeting with this means of reaching my destination, as it enabled me to take a barrel of spirit, and other heavy things, that would otherwise have been troublesome had I travelled by land.

I spent several days in San José, and passed the time shooting along the beach and about the lagoons; but as all the birds I met with occurred again at my next station, it will not be worth while to mention them here. On the 15th we left San José,—

the other passengers, besides myself, being an Englishman, Mr. E., who went to inspect the shipping of the cargo, and two Germans, one of whom had purchased produce in the interior; what the other was after, I never could make out. There is no such thing as a harbour anywhere along this part of the coast. Ships, which come to take in and discharge cargo, lie at anchor in an open roadstead, and boats are hauled to and fro through the surf by means of a rope, attached at one end to a buoy, and tightened from the shore. If the sea runs at all high (and this is speaking superlatively, as the heavy roll from the Pacific Ocean is never very slight), considerable risk is run in communicating with vessels, and not unfrequently no boat can pass. All the necessary paraphernalia of boats, buoys, and ropes, had to be taken to Champerico, as only on the occasion of a vessel touching there is the "port" open.

When a vessel is dependent upon land- and sea-breezes, her progress is often slow. It took the 'Vicuña' three days before she dropped anchor off a large thatched rancho on the beach, over which a flag was flying. It was rather a relief to find the place, as nobody on board knew exactly where it was. I had an indifferent map, showing the various fisheries along the shore; and we could make out, by a break in the continuous bank of sand forming the beach, where a large river entered the sea. By thus guessing the way, we at last made out the flag, putting an end to doubt. While it was calm enough to pick them up, I shot a few Sea-Gulls which followed the ship, and succeeded in securing a good specimen of *Larus cucullatus*, Licht., besides some of the much commoner *L. atricilla*, the Laughing Gull. In opening a communication with the shore the rope is first taken in a canoe, the "lancha," or boat, remaining outside the breakers. On this occasion the canoe upset in the surf; but the men, accustomed to such mishaps, succeeded in getting the end of the rope on shore. It does not often happen that a single rancho is distinguished with a name in a map; but Champerico is thus marked, consisting solely of a large store house, or *almacen*. Here I put up, with Mr. E., amongst the sugar- and coffee-bags. On arriving, I found Enrique Arcé (who was then, and is now, collecting birds), and my servant, Crux, who had travelled by land with my mules, &c.; so that I had now got everything together to commence work. Champerico was provisioned from the interior, water being brought down from a neighbouring creek in a canoe. Every morning a native paddled or punted the canoe up the sluggish stream till he considered the water fresh enough to drink, when he half-filled the canoe, and floated it down again. If the fellow was lazy he would take his stock too soon, and a flood of well-merited abuse would be heaped upon him for the rest of the day. It can be as easily understood as explained, that no amount of exertion on his part would make the water very palatable under the circumstances.

In a few words I will endeavour to explain the nature of the country immediately adjoining the sea. During the continuance of the wet season all the torrents, for such they are, which descend from the Cordillera flow, charged with volcanic sand and disintegrated scoriæ. These, on being discharged, the ocean casts back in a continuous line of sandbank. The constant heaping up of this sandbank often has the effect of closing the mouths of the smaller streams during the dry season, when the outflow is not sufficient to reduce the sand-bar. Such small streams then expand *inside* the sand-beach, forming lagoons and marshes along the whole coast. Sometimes the pressure and the rise of water inside breaks an opening to the sea during the ensuing wet season; at others, the lagoon remains as such for several seasons. In order to obtain fish, an artificial passage is frequently dug by the owner of the lagoon, when the tide will enter at each rise, bringing many species of fish from the ocean. This passage will remain open for a few months, though sometimes closing at once, thus limiting the quantity of fish to the number then enclosed, as the pent-up waters would no longer exist to assist in forming a fresh outlet. Other lagoons are purposely drained for salt. A kind of sluice is made, and the water run off at low tide. The salt is procured by scraping the mud into small heaps, and allowing it to dry, as much as possible, in the sun. It is then put into an old canoe, or trough, and mixed with water, which is drained off, and boiled in earthen pans. A large quantity of salt is procured in this district, both for curing fish, and for sending to the towns in the interior. There is some risk in procuring salt; a heavy shower washes a considerable portion of the saline particles out of the mud, so that it is no longer fit for the purpose. Still it is said to be a profitable undertaking; and several persons living in Retaluleu are reputed wealthy, from the salt-works they own. The lagoon of Chiapam I visited most frequently, being about half a mile from Champerico. The mayor-domo who had charge of the salt-works and fisheries, was uncle to the owner; and Tio Lencho, as he was usually called, did all that he could to assist me, by lending me a canoe and an Indian, or *mozo,* whenever I required one. Finding it better to be nearer my work, I moved all my things to his rancho.

This lagoon, when I visited it, was a tidal one. The bar had been cut through during the previous October, and had not again closed, though I heard afterwards that the outlet had silted up. At low water every sandbank would be covered with Gulls, Terns, and Waders. Of the former I obtained specimens, and saw quantities of *Larus atricilla,* and also a few immature birds of the White-headed Gull (*Larus heermanni,* Bp.) in the brown Skua-like plumage it at first assumes. Hooded Gulls (*Larus cucullatus,* Br.) did not frequent the lagoons. Of Terns there were numbers—the flock consisting principally of Cabot's Tern (*Thalasseus acuflavidus,* Cabot), the American representative of our English Sandwich-Tern, and the Royal Tern (*T. regia,* Gambel). I also saw occasionally Gull-billed Terns (*Gelochelidon anglica,* Mont.), identical with the scarce British, but commoner European, species which occasionally visits our shores (Ibis, 1864, p. 389). This last species does not congregate in any numbers, two or three at most being all that flew in company. The Long-billed (*Numenius longirostris,* Wils.) and Hudsonian Curlews (*N. hudsonicus,* Lath.) were both there—the former being scarce, but the latter in quantities. Godwits (*Limosa fedoa,* Ord) were also very abundant, and Willets (*Symphemia semipalmata,* Hartl.). All these used generally to be observed in one flock, with a pair of Oyster-catchers (*Hæmatopus palliatus,* Temm.) feeding in their vicinity. Grey Plovers (*Squatarola helvetica,* Cuv.) were occasionally seen, their unmistakeable black axillary feathers enabling one to distinguish the species at a distance.

Another flock would consist of Ring-Plovers, of which I found three species—Wilson's Plover (*Ægialites wilsonianus,* Cassin), the Semipalmated Plover (*Æ. semipalmatus,* Cab.), and the Western Plover (*Æ. nivosus,* Cassin). The first two were by far the commonest; of the last I obtained but one specimen. It appears to be a very rare bird, but few specimens existing in collections. Wilson's Plover remains to breed on the cays of the east coast, as I have mentioned in my previous paper (Ibis, *loc. cit.*). The only other Ring-Plover (*Æ. vociferus,* Cass.) which I have observed in Guatemala seems to prefer freshwater marshes in the interior to these salt tide-washed sandbanks. This last-mentioned species is common in the highland swamps, but is also found in similar localities in the hot districts of little elevation. Another common Wader frequenting the sandbanks was the Brown Snipe (*Macrorhamphus griseus,*Leach). I used always to see it feeding in the open where there was no cover whatever, its habits strongly contrasting in this respect with the common Snipe, to which it is closely allied. This bird and the European Woodcock (*Scolopax rusticola,* L.) seem to represent two extremes as regards choice of feeding-ground, the true Snipes occupying an intermediate place in their preference of grass and seeds. Another bird, though not very numerous, was the Turnstone (*Strepsilas interpres,* Illig.)—the wide-spread species, and not the Western American form called the Black Turnstone (*S. melanocephala,* Vig.). Semipalmated Sandpipers (*Ereunetes petrificatus,* Ill.), too, were very common. The variation in the length of the bill in this bird is very remarkable. Out of the same flock I have shot specimens whose bills varied in length at least a quarter of an inch.

My fishing excursions used frequently to take me up the creeks, or *esteros,* as they are commonly called. Their banks are lined with thick mangroves, amongst the tangled roots of which I usually saw Tiger-Bitterns (*Tigrisoma tigrinum,* Sw.) skulking, and also the small Green Heron (*Butorides virescens,* Bp.). Yellow-crowned Night-Herons (*Nycticorax violaceus,* Bp.), too, were not uncommon; and beautiful Snowy Egrets (*Garzetta candidissima,* Bp.) would always attract the eye as they rested on the mangrove boughs. A small flock of Roseate Spoonbills (*Platalea ajaja,* L.) not unfrequently flew across the creek, seldom within shot, but often near enough to show their brilliant colour. Cormorants (*Carbo mexicanus,* Brandt) rested on the trees or swam in the muddy water; and, perched on a topmost bough, a White Ibis (*Ibis alba,* Vieill.) would sit eyeing the movements of the canoe. It is often laughable to watch the hesitating movements of many of these birds. As the canoe approaches, they seem to have great difficulty in making up their minds whether to fly or not; you see them crouch down ready for a start, and then raise themselves up again, as if they thought its inmates were not quite so dangerous as they looked. If the head of the canoe be directed straight towards them, they soon make off; but if you approach by a deviating course, they seem to conclude they are not the object of your search. Nearly all the birds of these districts show little fear, and do not seem yet to have acquired the knowledge that man had always better be kept at a very respectful distance, his presence never betokening good to their race.

In the marshes drained for salt I observed many more birds. There is usually a shallow pool in the middle, round and in which they congregate. Let us approach cautiously through the fringe of mangroves, and see what birds are there. A few small fish have attracted some Pelicans and Terns. The former are perhaps fishing, taking short flights in the air and dashing down upon their prey, or resting, preening their feathers—an occupation a Pelican never seems to tire of: if it stops for a moment, it is sure to begin again with unabated industry. That Heron does not look quite like the common Snowy Heron, nor yet is it the larger kind (*Herodias egretta,* G. R. Gray), a few of which are a short way off: sure enough it is Peale's Egret (*Demiegretta pealii,* Baird). Its train looks different in the distance, and its size is intermediate. There is, too, another species with grey body, and soft rufous neck and train—this is also an acquisition—the Louisiana Heron (*Demiegretta ludoviciana,* Baird), a beautiful and very graceful bird. I watch some Black-necked Stilts (*Himantopus nigricollis,* Vieill.) as they wade about, pecking at the surface of the water. There are great numbers in small flocks. But what are the birds composing the flock at the other end of the pool? My glass discovers them to be Avocets (*Recurvirostra americana,* Gm.). None have the rust-coloured head and neck of northern specimens: all have these parts white, and are in the plumage which caused them to be separated by Vigors under the name of *Recurvirostra occidentalis*. Professor Baird considers this to be the immature stage of the northern bird, in which conjecture he is perhaps right; but if identical, may not this be the winter plumage of the red-necked bird? All the birds I saw, and I must have met with several scores, were similarly coloured; and out of so many, a considerable proportion, at least one-third, must have been adult birds, supposing a pair to rear four young. Avocets often swim, and are most industrious feeders, their bills being constantly at work; and how admirably adapted is this curved and sharp-pointed organ for picking the most minute object from the surface of the water! Other large birds frequenting these ponds are the Great Blue Heron (*Ardea herodias*, L.), a species never allowing one to approach it, Roseate Spoonbills, and Wood-Ibises (*Tantalus loculator*, L.).

It was some time before I could make out what Tio Lencho meant by the "Paloma rayadora"—a very curious bird, he said. From the name I suspected it to be the Black Skimmer (*Rhynchops nigra*, L.); but I could never meet with it, till at last I came upon a large flock in a closed lagoon called Acapam, two leagues from Chiapam, where I was staying. They were, exactly as Audubon describes them, sitting on a spit of sand. It was just daylight when I first saw them; they were then resting, and always settled again after being disturbed. I only stayed at this lagoon during the day, and had no opportunity of watching the nocturnal habits they are said to have.

In this lagoon I saw a good many Ducks, principally American Widgeon (*Mareca americana*, Steph.) and Teal (*Querquedula discors*, Steph.). There was also a small flock of Long-legged Ducks (*Dendrocygna autumnalis*, Eyton), and I could plainly hear their clear whistling note as they flew. It is the "Pato chiflador" of the natives. I also found a pair of Ospreys (*Pandion carolinensis*, Bp.); indeed every lagoon has its pair, and the bird is very abundant on both coasts. During my ride back along the beach from this lagoon I saw a Burrowing Owl (*Athene hypogæa*, Bp.) peeping out of a rabbit-hole. It retired as soon as it saw me, and I failed to dig it out. It is a very common species on the coast, the sandy beach being no doubt favourable to its peculiar habits.

Whilst I was staying with Tio Lencho, some of his nieces and relations came from Retaluleu to enjoy a "temporada" at the sea-side. The alcalde, one Manuel Quiñones, accompanied them. Though very stout, he was active, and, besides being a tolerable shot, used a fish-spear with some dexterity. He often went out fishing and shooting with me. One evening, when the tide was out, we went along the beach to get some Crustaceans, called there *Chiquirin* and *Rey chiquirin*, which frequent the sand, and are found just within reach of the water as it flows and ebbs over them. They bury themselves in the sand, the feelers only remaining exposed. I was not at all up to catching them; but Quiñones was very skilful; and a most absurd sight it was to see him as he ran along in the water in the lightest possible costume, every now and then rushing forward and digging rapidly with his hands. If successful, he would toss the *Chiquirin* high on the beach, where it was duly secured. Spanish is an accommodating language, so that this process was called "chiquiriniando"! Vast numbers of these Sand-hoppers are caught, spitted on a stick, a dozen in a string, and toasted over a fire. They are sent thus prepared to Quezaltenango and the Altos, where they are esteemed a great delicacy by the Indians.

The same evening we shot two Iguanas as they came out of the sea, having been down to wet themselves; one gave us a long chase, as it escaped into the surf.

I had still another series of lagoons to visit; but to get there, it was advisable to go round by Retaluleu; so packing all my fish and sending them to San José by the 'Vicuña,' I rode all one night by moonlight, and reached Retaluleu the next morning. It was a tedious journey; but night is preferable to the scorching heat of the day, the forest not being dense enough in many places to afford much shade; the dust, too, which is very bad during this season, does not cause so much annoyance by night. There is a great contrast between the ornithic productions of the two sides of Guatemala, the Pacific coast being remarkable chiefly for the absence of many of the most familiar birds of the low forests of Vera Paz. One listens in vain for the melancholy wail of the Colola (*Tinamus robustus,* Scl., and *T. boucardi,* Scl.); nor is the well-known cry "Tres-pesos-son," from the Pigeon (*Columba nigrirostris,* Scl.), ever heard. Nor yet does the large Cacique (*Ostinops montezuma,* Scl.) ever disturb the silence of the forest. The eye, too, searches in vain for familiar forms of Tanagers (*Rhamphocelus* and *Calliste*); nor is a single Chatterer (*Cotinga amabilis,* Gould) anywhere to be seen. Much of the forest consists of bamboo, with here and there a huge lieba. There is, however, a belt of normal tropical forest, four leagues wide, commencing about twelve miles from the sea, between which and the sea the soil seems comparatively unproductive. Everything bears the stamp of land reclaimed from the sea at a comparatively recent date. The long line of volcanoes suggest a recent slow upheaval; and the constant discharge of sand by every river would tend to advance the coast-line by slow degrees.

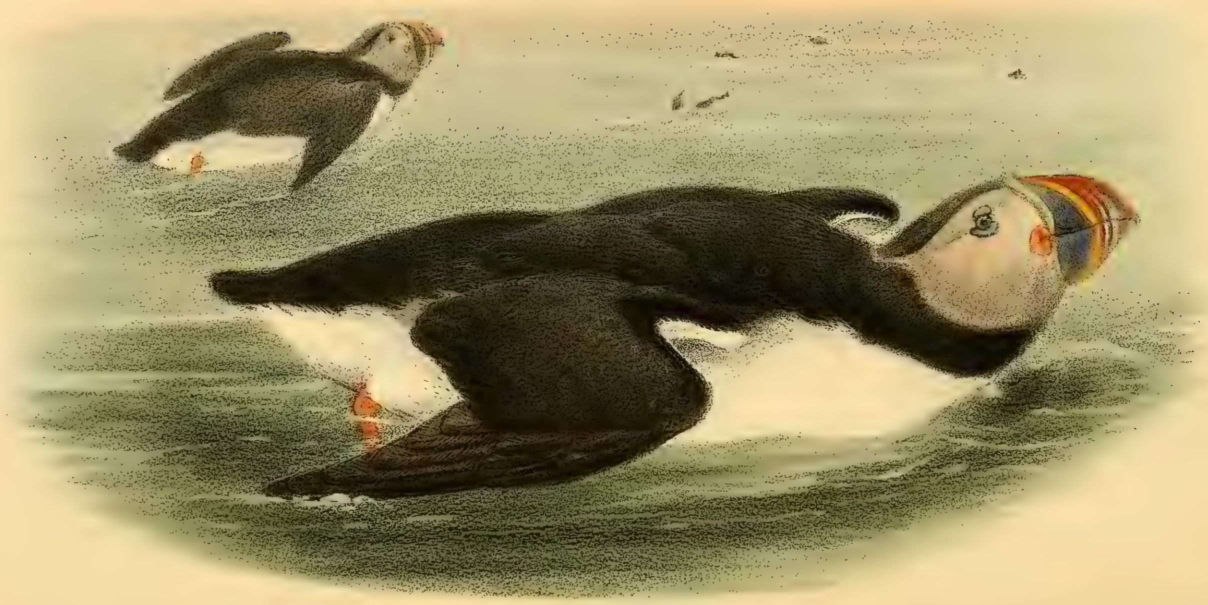
Such speculations occupied my thoughts as I rode to Huamuchal, my last fishing-destination. This name is applied to a district lying on the Mexican frontier, the boundary being the river Tilapa, the right bank of which is in the province of Soconusco, and therefore Mexican territory, though Guatemala, according to some maps, lays claim to the ownership. The country is almost perfectly flat, and during the rainy season the greater portion of it is flooded. The first rise of the river causes this, and a stretch of country, extending inland some twelve or fifteen miles, is covered with water. As the dry season sets in, the water gradually subsides, leaving a number of shallow lagoons in the depressions of the land, none of which are more than about four feet deep. It sometimes happens, in seasons of great drought, that even these dry up, with the exception of one large lagoon—that of Tamachian. From this, Huamuchal would be re-stocked with fish. The species of fish are not numerous; they consist of an *Atractosteus,* two species of *Pimelodus,* two of *Heros,* two or three Salmonoïds, and some three or four more kinds. The first is the most remarkable, its occurrence here showing a wider range of a northern genus. It is also found in some lagoons on the frontier of San Salvador. During the period just preceding Lent it is much sought for. The process of preparing it differs from that applied to other species, which are split and then salted. The "Peje Armado," as it is called, has the scales united into a strong kind of armour. A sharp stake is cut and thrust into the mouth of the fish, and passed quite through its whole length. It is then roasted over a fire till the scaly coating splits and can be easily removed. This done, the roasting is proceeded with, but over a slower fire. The stake, which is often an inch and a half in diameter, is not withdrawn; but with the ends chopped off, the prepared "Armado" is sent into the interior. Very few reach Guatemala, as the Indians of the Altos consume all before they get so far. It is a favourite cargo for an Indian pedlar for his return journey, when he has come from the Altos with the productions of the cold climate—flour and cloth; for, in spite of the heat, every Indian possesses his *chamarra*, or rug. A few cattle are fed at Huamuchal, which on the approach of the floods are driven further inland. The water of the lagoons is slightly brackish and very muddy, being constantly stirred by alligators, turtle, fish and innumerable birds.

There was a mayor-domo of the *hacienda*, and a mayor-domo of the "*pesqueria*," or fisheries—the one to look after the cattle, and the other to superintend the fishing. Both these dignitaries were "sambos"; that is, half-bred, Indian and Negro. I put up in a rancho attached to the former department, both because there was grass at hand for the mules, and it was near the river where the water is fresh. The fisheries were about two miles off. The practice was, when one lagoon failed to yield sufficient fish, to haul the canoe overland to another; and the rancho in which the Indians lived was in a central point near a cluster of lagoons. The Indian workmen, mayor-domos and all, are bound almost as closely to their master as if they were slaves. They commence service by borrowing money, which the master takes care is not repaid, as the existence of the debt gives him great power over his workpeople, almost enabling him to compell them to work to pay the sum they owe. This goes on all their lives. By an arrangement between masters, a servant and his debt change hands. This is rather like slavery; but I never saw any of the cruel features of that "institution" practised, nor do I think such would be permitted.

With the exception of the Gulls and Terns, of which I saw none, most of the birds of Chiapam occur at Huamuchal. In my walk to the lagoons I usually saw great numbers of Wood-Ibises, literally hundreds of Ducks (mostly Shoveller, Widgeon, and Teal), Stilts, Avocets, Herons, and Spoonbills; nor were Sandpipers less numerous. There were, however, several birds which call for special attention, as either I had not observed them anywhere else, or they had rarely come under my notice. I had heard of a great bird called, in Retaluleu, "*Garzon pulido,*" but could never make out what it was; I suggested the Wood-Ibis, but they would not hear of it. The bird, they said, was three or four times as large. Fancy my astonishment at seeing the American Jabiru (*Mycteria americana,* L.) stalking about the banks of one of the lagoons. It cost me no small trouble to obtain specimens, as it proved to be a most wary bird. At last, one afternoon, I happened to be in a canoe, and seeing one on the bank, steered for it. Fortunately, it was so busily engaged with an eel, that when it took wing I was near enough to bring the huge bird down with a double shot. It was wounded, and showed fight as the canoe shot by; Enrique, who was in the bows, defended himself with a game-bag; I, as we passed it, fenced its formidable bill with my gun; while the Indian jumped overboard and made off. It was a splendid bird, measuring 6 feet 6 inches from the tip of the bill to the end of the toes. As in many more of its allies, the white feathers have a beautiful satin-like gloss. The bare neck and head, in life, are deep black, succeeded by red on the lower third of the neck. Its step is slow and stately. The home of this *Mycteria* is the Amazons; and I was surprised to find it so far from what I thought was its native land. Enrique afterwards shot another, a female, with a few white feathers about the head.

These lagoons were frequented by a large flock of White Pelicans (*Pelicanus erythrorhynchus,* Gm.), a bird I had long sought. The first time I found the flock, they were feeding in a lagoon; and I tried to secure some specimens by hiding on the bank, while Enrique waded and drove them. They all rose out of shot, and, wheeling round, left the lagoon. They settled on another, but again took wing long before I was within reach. It is a bird that soars a great deal more than the common species (*P. fuscus*, L.), which never, to my knowledge, does more than skim the surface of the waves, in flocks of six or eight, or, in larger numbers, fly from its feeding- to its roosting-place. I frequently saw these birds soaring in the air like Vultures, and mounting by gyrations till almost lost to sight. After a time they would gradually descend, and then fly off to a lagoon to feed. There must have been nearly a thousand individuals in this huge flock; and the noise they made, by dashing into the water when feeding, could be heard at a great distance. I observed they never flew far when in pursuit of fish—twenty or thirty yards, at most, from where they rose, to their plunge on their prey. The water would be quite lashed into a foam where many plunged in together. After several disappointments, I at last was fortunate. The flock was feeding in a lagoon where there were two canoes, in one of which some men were fishing with a drag-net. Seeing that the birds took very little notice of the fishermen, Enrique and I joined them in the other canoe, and, after waiting about for some time, managed, by degrees, to get within shot, when our four barrels brought down four birds. These we had to carry to the rancho in a scorching sun at mid-day. They weighed almost a hundredweight. There were a considerable number of Stone-Curlews (*Œdicnemus bistriatus*, Wagl.) frequenting the grassy *savanas* between the lagoons. I used to see them almost every day, and on one occasion found a nest with one egg. They cry at night, just as our English Norfolk Plovers do, the notes being very similar. Musk-Ducks (*Cairina moschata*, Flem.) being a desideratum to my collection, I devoted one afternoon to the pursuit of them. They are seldom seen in the open water, but prefer the creeks shaded by mangroves, where they abound, resting either on the trees, or swimming in the water. I was unlucky—seeing many, but none within shot. They are wary birds, never allowing one to approach them. Enrique afterwards secured specimens.

It can easily be imagined that the neighbourhood of so man stagnant pools is by no means healthy. One runs the risk,



J. Wolf. del, et lith.

M & N. Hanhart imp

FRATERCULA GLACIALIS.

even at the best time of year, of catching a malarious fever, more or less severe. I used always to take a good dose of quinine every morning, and administered another to Enrique and Crux, but the latter had a slight attack. I found him shivering one day, and in tears! He had caught fever and was going to die, and so far from home! I gave him about twenty grains of quinine, and told him to lie down. He almost immediately went to sleep, and never woke till next morning. The fever had left him; but he had another slight attack after returning to the highlands. Neither did Enrique escape; but he was a man of quite a different stamp, and, though suffering from frequent returns of this assiduous enemy, continued his expeditions after I left the country. It has followed him into Costa Rica, where he is now making collections of the splendid and little-known birds of that country. I escaped with the same good fortune I always had in Guatemala, never having had an attack of fever the whole time I was there. How Mr. Bates, on the Amazons, existed so long upon fish only, I cannot imagine. I was sick of the sight of it after a month of little else. There is, perhaps, no food of which one so soon becomes disgusted as insipid fish badly cooked, the usual fare of Chiapam and Huamuchal. This was my last cruize in Guatemala; a month later and I was again at San José, on my way to Europe, having in the meantime taken a flying visit to some of my old quarters in the highlands.

XX.—*Notes on the Birds of Spitsbergen.*

By Alfred Newton, M.A., F.L.S., &c.

(Plate VI.)

Having last summer, thanks to the hospitality of Mr. Edward Birkbeck, enjoyed the opportunity of visiting Spitsbergen, a country in many ways very interesting to a naturalist, and which therefore I had long wished to see, I believe that a paper on its general ornithology will not be unacceptable to the readers of the 'Ibis'; and I am fortunately able to supplement my own very limited observations on that subject by the more extended, and therefore the more valuable, experience of one whose authority is far higher than mine. In 1861, Mr. A. J. Malmgren accompanied the Swedish Scientific Expedition to Spitsbergen, and in 1863 communicated to the Royal Academy of Stockholm, with other papers, a very carefully drawn-up list of the birds of that country*. Last year this gentleman again formed part of the same expedition, and I had the very singular good fortune of meeting him in those arctic solitudes, and of comparing notes with him. On one or two minor points I differ from the opinions which have been placed on record by my friend (for so I feel I may now call him); but of the importance of his article on the ornithology of Spitsbergen, compiled, as it is, with so large and so accurate a personal knowledge of the subject, combined with so much research into the writings of former visitors to that inhospitable land, and tempered by the greatest good judgment in treating of their labours, I desire most fully to declare my high appreciation.

Though hitherto Mr. Malmgren's remarks have not been brought directly to the knowledge of English ornithologists, our German brethren have had the advantage of reading them in their own language, a translation of his paper, by Dr. C. F. Frisch, having appeared in the 'Journal für Ornithologie' for 1863 (pp. 358–387 and 447–458). It seems to me that my fellow-countrymen should not be deprived of the like benefit; and I shall therefore, in the following notes, make no difficulty about quoting Mr. Malmgren's opinions, whenever (as is often the case) they afford new information on the subject.

But before proceeding to give an actual list of the feathered inhabitants of Spitsbergen, it may be as well to state, as briefly as I am able, the amount of personal acquaintance which I can claim with them. My paper will therefore naturally divide itself into two portions,—the first being a narrative of my own proceedings in that country; the second a catalogue, with more or less scientific pretension, of the species which are there to be found.

On the morning of Sunday, the 3rd of July 1864, we left Hammerfest. The following day we met many Fulmars—birds which, so far as I know, do not breed on any part of the Norwegian coast. On the 5th we saw numerous *Alcidæ*, and thence concluded we were not far from Bear or Cherie Island, though the thick state of the weather hid it from our sight. On the evening of the 6th we made the land off the South Cape of Spitsbergen; but almost at the same time we encountered a great deal of floating ice, and our pilot informed us it was useless attempting to reach our place of destination in the large inlet generally marked on English charts as Wibelan's Water, but now-a-days more commonly known as the Stor Fjord, a name which I shall here use. We accordingly stood away to the westward, and next morning we saw Rotches, Bruennich's Guillemots, and Burgomasters* round the ship. About midday the land broke out through the fog, revealing the high mountains near Bell Sound, for the entrance of which we accordingly steered, only, however, to find it still closed by the ice, as we had previously discovered the Stor Fjord and, in the interim, Horn Sound to be. The yacht's head was again kept to the north, and towards midnight of the 8th of July we were entering Ice Sound, passing through belts of floating ice into a magnificent inlet, on the northern shore of which rose a grand mass of snow-capped cliffs, fronted in regular order by a uniform series of buttresses formed of disintegrated rock, its sky-line varied by peaks and pinnacles of greater or less size, till towards its south-eastern end it ceased almost abruptly, and shooting out into a mighty horn, with an edge like that of a knife, descended to a long low point almost on the sea-level.

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* Anteckningar till Spetsbergens Fogel-Fauna. Af A. J. Malmgren. Œfversigt af Kongl. Vetenskaps-Akademiens Förhandlingar, 1863, p. 87.

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* In a narrative such as the present, I think it is more convenient to use the names locally applied to the animals one sees, rather than those by which they are termed in books of natural history. As the principle of vernacular is totally different from that of scientific nomenclature of species, there is, I apprehend, the less objection to this practice. Talk to a sailor of a Little Auk, a Black Guillemot, or a Glaucous Gull, and he will set you down at once for a "sea-lawyer"; but speak of a Rotche, a Dovekie, or a Burgomaster, and he will understand what you mean. The practice, however, has its limits; and I am obliged to use the name Bruennich's Guillemot, because that species is not distinguished by seafaring men from the ordinary Loom of more southern latitudes (*Uria troile*). The names Fulmar and Mallemuck seem to be indifferently applied; I have here preferred the first, though it has not the recommendation of antiquity, because the second is now-a-days so commonly misapplied to *Diomedea melanophrys*.

As we slowly sailed along, I thought I had never beheld a fairer spectacle. The calm blue sea, wherein floated icy blocks of fantastic form, the dazzling white of their surfaces relieved by the brilliant hues of sapphire and emerald which gleaned from their waterworn and cavernous sides. In the distance to the left, the peaks of Prince Charles' Foreland were peering through the soft northern haze, while ahead there was the Sound stretching far away to the eastward, hill rising beyond hill in endless succession until the furthest were so velied by the mists that their outlines ceased to be discernible. Nearer at hand was abundance of life—White Whales rolling rapidly and easily across our bow—multitudes of birds, Guillemots, Rotches, and Dovekies, Fulmars, Kittiwakes, and Burgomasters, Geese and Eider-Ducks, some busily seeking their food in the water, others congregated on the ice-floes, resting from their parental cares, others, again, hurrying to and fro with bustling anxiety, but all lending the charm of animation to what, without them, would have been a desolate scene, notwithstanding that the polar sun shone brightly over the whole.

Presently we rounded the low point I have just mentioned, and then there opened to our sight a small rectangular bay, some two miles or more across by about five in depth. Its head was terminated by a glacier; while on our left were two more, one, like the first, reaching to the water's edge, and presenting a perpendicular face more than one hundred feet in height, the other suspended on the hill-side, and at that time almost entirely covered up with snow. This bay is named—and well named—Safe Haven. Here we came to an anchor, a short distance from a small schooner, which our pilot at once recognized as that of the Swedish expedition.

On the morning of the 9th of July, two of our party proceeded in the cutter to Coal Bay in quest of Reindeer. Just before starting, an Ivory-Gull, attracted by some offal thrown from the Swedish schooner, came round us, and, alighting on a block of floating ice, became the firstfruits of our Spitsbergen *fangst*. I forthwith set off for the great range of cliffs we had passed the preceding night, to see what could be done in ornithology. On landing, we found the ground not entirely free from snow; and those parts from which it had melted were in a state not very comfortable for walking upon, the broad and gently sloping undercliff being covered with soft mud several inches deep. I had seen, in coming in, about a score of the large Geese which, in 1855, my friends Messrs. Evans and Sturge had not succeeded in satisfactorily identifying (Ibis, 1859, pp. 171, 172), and accordingly I sent Ludwig—Mr. Wolley's Ludwig, who had joined me in England the day before we sailed—close along the shore to try and discover a nest of the species. I kept the middle ground, while my other two companions made for the base of the cliffs, with ardent hopes, which were not gratified, of being able to ascend them. After we had all wandered about for some hours, we foregathered on a low rocky ridge which ran across the slope, to recount our adventures, or, as it unfortunately happened in this case, the want of them. There was not much excuse for expending powder and shot. I did not, however, neglect the opportunity, which had never before occurred to me, of securing some specimens of Fulmars without dropping them in the water. On picking up one which fell on the dry land, I was rather surprised to find its plumage tinged in several places with a bright reddish-orange hue. I at first thought it was stained by the oil which these birds, when killed, sometimes discharge; but I found subsequently that the effect so produced was entirely different. This orange tint was very evanescent, and had entirely disappeared from the only specimen on which I observed it by the time I returned to this country. While eating a frugal luncheon, I watched a hen Snow-Bunting to her nest, from which, with a considerable amount of trouble, we at length extracted four highly incubated eggs; and presently Ludwig discovered another, containing six in a still worse state. But though there was little ornithological spoil to be obtained here, the scene was one most fascinating to an ornithologist. Never in my life had I seen such myriads of birds (chiefly Rotches and Bruennich's Guillemots) as those which throng the stupendous peak of the Alkenhorn and the line of cliffs to which it forms so grand a termination. Their cries, from these airy heights, came upon the ear blended by the distance into one monotonous murmur, like the sound of a rushing torrent, interrupted by the petulant barkings of the Arctic Foxes, or the shrieks of casual wanderers from the countless multitude, which, persecuted by Burgomasters or Skuas, or, for some other reason straying from their wonted course, now and then passed backwards and forwards at a much lower level, and yet far overhead. On firing a gun at the foot of the precipice, a dead silence of a few seconds ensued, until the echoes of the shot reverberated from the face of the rocks. Then the birds might be seen darting out like a swarm of bees when their hive is attacked, and filling the whole air—the Rotches hardly visible to my eyes without glasses, the Guillemots more perceptible, but still diminished by the vast height to mere specks. As they fly out seaward and pass over us, the hollow rumbling sound of their "infinite wings," beating the air with rapid strokes, comes down to us. Then they turn, and now louder than ever is the uproar: where one bird vociferated before, probably ten are clamorous now. For the Burgomasters and Skuas seize their opportunity and dash in to pilfer the unprotected eggs and young. After some ten minutes or so the additional outcry dies away into the normal confused murmur. But the whole scene completely beats description. It would be idle, I think, attempting to compute the number of birds that breed on this range of cliffs. Admiral Beechey states* that in Magdalena Bay, further to the northward, he frequently saw a column of Rotches, which, by means of a rough calculation, he estimated as consisting of "nearly four million of birds on the wing at one time." This result seems almost incredible; but I do not feel justified, after what I have seen, in treating it as an exaggeration.

Returning to the yacht, in the evening we made an excursion towards the glacier at the head of the Haven, and watched a Fox attempting to surprise a couple of old Eider-drakes, who, however, were too sharp for him, and took flight just as he was preparing to spring upon them, leaving him hungry and discomfited on the beach. Later, or early in the morning, the party returned from Coal Bay, where they had obtained two Deer, and seen several "North-east Birds" (*Phalaropus fulicarius*), of which they shot a pair. On the 10th, being Sunday, we were contented with visiting a small rock lying close to, but detached from, the south-eastern point of Safe Haven. Here we found numbers of Eiders breeding. In a very short time we collected from sixty to seventy eggs, all of them fresh-laid; and as a proof of the fecundity of this species, I may mention that, though we cleared every nest we saw, some of our men (whose appetites were whetted by our success), going later in the day, obtained over a dozen others that had been laid in the short interval since our visit; and again, about midnight, Ludwig returned and took several more. While we were upon this rock, which henceforth became known to us as the "Eiderstone," the Skuas were extremely bold, robbing two nests within a few yards of us; and one bird was not even deterred by my companions pelting him with stones, but continued sucking the egg he had got, and merely shrugging his shoulders when the missiles (not large ones certainly) hit him. On the top of this rock are the remains of an old hut, the stone walls of which were still standing to the height of a couple of feet, and in each corner of the enclosure was an Eider's nest comfortably ensconced. On this same day a couple of Dovekie's eggs were brought to me by one of the crew, with the bird, which had been knocked down by an oar on the east side of the Haven. The eggs were said to have been lying exposed on the rock, and not placed in a hole.

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* A Voyage of Discovery towards the North Pole, performed in His Majesty's Ships 'Dorothea' and 'Trent,' under the command of Captain David Buchan, R.N.; 1818. By Captain F. W. Beechey, R.N., F.R.S. London: 1843. Page 46.

On the morning of the 11th of July, the whole party started in two boats (one of which was hired, with her crew, from a Norwegian sloop that had come in the previous day) for the south side of the Sound, which we found rather closely beset by ice, and through this we had to work our way. We made for a little valley, higher up than Coal Bay, from which it is divided by a range of lofty cliffs. These, I learned, were what are called, by the Norwegians who visit Spitsbergen, the Alkefjeld or Alkenfels, and not the cliffs terminating in the Alkenhorn, on the west side of Safe Haven, as Messrs. Evans and Sturge were told (Ibis, 1859, p. 169). The precipices on either side of this valley appear to be swarming with even more Guillemots and Rotches, if that were possible, than those I have previously attempted to describe. I do not think any part of them could be scaled by man; indeed, were it otherwise, the Foxes would, no doubt, make their way as well to the ledges containing the eggs and young, and inflict dire destruction on the rising generation. It is fear of the Foxes, I believe, that induces these birds in Spitsbergen, instead of dispersing along the coast, to crowd together in such a wonderful manner, wherever secure ledges can be found, even though they be, as they often are, at so inconvenient a distance from the sea as five or six miles. On landing in this valley, some Reindeer were seen close by; and while my friends set off in pursuit of them, I strolled along a little brook that here has its exit. Three old Burgomasters, gravely holding a coroner's inquest on the body of a deceased comrade, and about as many Purple Sandpipers were the only birds that enlivened the land. But overhead continuous strings of Guillemots and Rotches were perpetually passing up the valley to their homes, from which, of course, proceeded the ceaseless murmuring roar of thousands of bird-voices, but here modulated by the distance, and almost drowned by the babbling of the brook upon which I was poring. Lit up by the northern sun, for it was now getting on towards midnight, I could see their white under-surfaces twinkling like stars against the brown cliffs, as train after train, in long succession, sped on. It required some exercise of faith to feel assured that they were birds, and not "the gay motes that people the sunbeams." By-and-by came some Fulmars, of an inquiring disposition, wheeling past me, and then large flocks of Kittiwakes (for these birds also breed in the adjacent lofty cliffs) returned from their foraging expeditions; and as, beating up against the gale, they found a man lying in their line of flight, their well-known alarm-cry of "pick-me-up," "pick-me-up," brought the echoes out of the rocks. Later on, I saw some of my friends making their way to the boats, and then it was decided that we should encamp at once where we were. So the tent was pitched, drift-timber collected for a most cheering fire, and after supper we all turned in, and, notwithstanding the cold, had a good sleep, while the west wind was driving the ice up the sound, and piling it on the shore, so as to make it almost doubtful whether we should be able to get away next day.

On the 12th we were, after all, able to run the blockade of the ice without much difficulty, and about noon we started for the eastward. Little occurred that need here be noted. After some hours of hard pulling, we rounded a low barren point, whereon stood an old hut, built by the Russians in days gone by, and now tenanted by three shipwrecked Norwegians, who had been there some weeks and, by killing Reindeer, managed to exist without great apparent hardship. We then found ourselves in a bay, shaped something like this, , and called, I believe, Advent Bay. Here, again, Deer were seen; and while some of the party went after them, I proceeded to choose a point for camping. Towards the inner curve of the bay, the water shoaled very much, and it was not easy to find a channel for our heavily-laden boats. At last we succeeded in getting to land, disturbing, as we approached, a great many Eiders, and two flocks of Brent-Geese; at the latter of which I had an ineffectual shot with a rifle. Just before we turned in for what, in other latitudes, is called the night, we observed a thick fog slowly creeping up the sound; and during our hours of rest we heard the ice crashing and growling, as it was driven into our shallow bay by the strong north-west wind. Next morning we awoke to find everything obscured by a dense fog, and the bay full of heavy ice—two circumstances that did not promise well for our return to the yacht, from which we were now some thirty miles distant. However, we prepared to start, and while we were striking the tent and packing up, a bird flew past, which had all the appearance of a Turnstone (*Strepsilas interpres*). I marked it down by the side of a pool of brackish water, and having pointed it out to one of my companions, requested him to get it for me, as I was otherwise engaged at the time. He went off, and presently I heard him shoot; but the supposed Turnstone had performed a trick which, I suppose, on the other side of the Atlantic would be termed "playing 'possum," and the victim of my friend's shot was nothing more than a Purple Sandpiper. Thus I lost the chance of indubitably adding this cosmopolitan species to the Spitsbergen *Ornis*.

At length we got away; but the combination of ice and fog required great care in steering. From the middle of the bay we could not distinguish the land on either side; and my little pocket-compass, the only one we had in the skiff where I was, was so easily affected by the proximity of iron, that I had to pass the guns forward, and even then could not place much confidence in it. Presently, after working round some very big hummocks of ice, we saw the other boat hauled up on the point near the hut before mentioned; and by its side was a fine large whale-boat, from the stern of which gaily waved the split Swedish flag. This sight gave me great pleasure; for I knew that this flag betokened the presence of Professor Nordenskjöld, the leader of the Swedish Scientific Expedition, on account of whose prolonged absence, there had been some little anxiety expressed by his comrades, whom we had left on board his schooner in Safe Haven. A few minutes after, and I joined the party on the beach—my friends, who had landed first, acting as Masters of the Ceremonies and presenting me to the Professor and to Mr. Malmgren, who was with him. It was rather a singular meeting; but right glad was I to make the acquaintance of a fellow-ornithologist, and that on the very scene of his labours. However, there was but a short time to interchange civilities. The weather was threatening, we had all a long day's work before us, and the Swedes especially were desirous of regaining their vessel, from which they had been absent more than a fortnight, having penetrated some thirty miles further up the Sound, where, probably, man had never been before, and where they had been completely blockaded, and their return prevented, by the ice. Once more, therefore, we started. Emerging from Advent Bay, and getting into the Sound, we found, to our joy, the fog and ice clinging to its southern side—the northern coast, with its continued succession of glaciers, all reaching to the sea, and some of them of very great extent, being quite clear of both these foes to navigation. After a most weary pull—a great part of the way against the tide—which equally tried both the patience of the sitters and the endurance of the oarsmen, we reached the yacht just about midnight.

On the 14th I did myself the honour of paying Mr. Malmgren a visit, on board the vessel of the Swedish Expedition—the 'Axel Thordsen'; and he showed me several very interesting birds. First of all, there was a cock Ptarmigan in the flesh, which had been shot many miles away, up the North Fjord of of the Sound, and was the only one he had seen that year. It was still in winter-plumage, but having a very few coloured feathers sprouting through the white ones, which, as I have observed also in the Ptarmigan of Iceland at the corresponding season, May or early June, were exceedingly soiled. I shall, of course, have more to say respecting this species in the concluding portion of my paper. Next, there were two of the large Geese which I was, as already mentioned, so anxious to examine and identify. One of the specimens I had seen the preceding day among Mr. Malmgren's baggage, and I had then recognized it as *Anser brachyrhynchus.* My opinion was now entirely confirmed; and I was pleased to hear that this example had been shot by him from the nest, at Middle-hook—the point of land which divides the North and South Fjords of the Sound. Mr. Malmgren most kindly presented me with two of its eggs; and I was glad to find that, with that readiness which so well becomes, if it does not characterize, the true man of science, he was disposed to reconsider the opinion previously expressed by him, and, in this instance, to agree with me in my determination of the species. Besides these birds, I was also shown a fine Long-tailed Skua (Buffon's), a new addition to the Spitsbergen avifauna; an immature male example of the King-Duck, killed in the Haven; as well as, if I remember right, an adult specimen of the same species, obtained at Bear Island. Some other interesting bird-talk followed, which was again renewed in the evening, when he, with his two companions, Professors Nordenskjöld and Dunér, came to dinner on board the yacht.

Next day, the 15th of July, I went again to the undercliff of the Alkenhorn; and here I ought to mention that Ludwig, who, during our recent boat-expedition had remained with the yacht, had made two attempts, on as many days, with ropes and some of her crew, to scale its heights, but found this mighty stronghold of the birds utterly impregnable. On this day, however, he picked up on one of the slopes a Fulmar's egg, which had evidently been carried off and sucked by a Fox, a Burgomaster, or a Skua, and still presented a fair show-surface. I mention this, not only because, according to Mr. Malmgren's experience, this bird had previously been known to breed in Spitsbergen only on the north side of Brandy-wine Bay, but because this specimen was the sole oological spoil I obtained from the cliffs of the Alkenhorn. Two of our party again repaired to Coal Bay; whence they brought some more examples of the "North-east" or "Mahogany-Birds," as—from their bright bay plumage—our sailors got to call *Phalaropus fulicarius*.

On the 16th I landed on the east side of Safe Haven to collect plants and fossils, some of the rocks which form it being extremely rich in the latter productions. I sent Ludwig over the ridge on a tour of discovery; and after some time he came back with the intelligence that he had found a Goose's nest containing two young ones only just hatched, and he brought me the shells of the eggs which had been lying in the nest. It was then getting very late, and our Captain, who was of the party, wished to return to the ship. However, I persuaded him to wait while Ludwig went back with another of my friends who had his gun with him (as I, unfortunately, had not) to try and get one of the parent-birds, and at all events to bring away the Goslings. They accordingly set off; but were not successful in the first and principal object, though my friend had two shots at the old birds. I was thus foiled in my attempt to identify the species; but from the curve of the fragments brought to me by Ludwig, I have little doubt it is the big Goose of the country, and that the Goslings are therefore the young of *Anser brachyrhynchus*. While waiting about on one of the raised beaches on which the ridge is based, a Skua lit down within a few paces of me, and, disregarding my presence, coolly began to uncover an Eider's nest I had not previously observed. As it was clear the poor Duck would not now profit by her care in concealing her treasure, I took up the single egg it contained; but even then the voracious bird returned to the spot, and was not satisfied till he had turned all the down out of the hollow in which the nest was formed. This same evening, to our great regret, the Swedish Expedition left Safe Haven in pursuit of its arduous duty—that of making the surveys preliminary to the measurement of an arc of the meridian.

On the evening of Sunday, the 17th of July, I embarked on board a Norwegian sloop, which had been hired at Hammerfest to accompany us and had now at length arrived; and we sailed up the Sound to Advent Bay. On the next day nothing occurred worthy of noticing here. On the 19th we left our anchorage in the bay; and I proceeded in one of the whale-boats further up the Sound, in pursuit of Deer, Seals, or anything that might turn up. None of the first were obtained this day; but after a most exciting chase, a very fine *Phoca barbata* fell a victim to my companion's rifle and our harpooner's deadly steel. Being some two miles from land when the capture was made, the operation of flensing had to be carried on over the boat's side; and as the gory carcase was divested of its skin and blubber, we were surrounded by from twenty to thirty Fulmars, some of which came within an arm's length and seated themselves on the water in expectation of a meal—an expectation not fulfilled; for no sooner was the job completed, and the last flipper severed, than the shapeless mass sank into the depths below. We continued our progress along the south shore of the Sound, until we observed a tongue of land whence diverged several likely-looking valleys. For this we accordingly made. Reaching the shore and jumping out to haul up the boat, we found we had hit on a quicksand, which nearly drew off our big boots; but we accomplished our object without a wetting, and then discovered that the beach above high water-mark consisted almost entirely of dirty ice. My companion started for the hills to look for Deer; while I beat the low ground, in hopes of finding Phalaropes, as there were nice pools of water, such as in Iceland, at least, would have been frequented by the allied species. But no luck rewarded me; and I returned to the boat, turned her up as a screen from the wind, which was blowing bitterly cold from the north-east, and, collecting drift-wood for a fire, prepared to bivouac. While lying motionless under the lee of our extemporized shelter, I spied a Red-throated Diver hugging the shore as he drifted along with the tide, lifting his head only occasionally above water to see where he was going. When he arrived just opposite the camp, a sudden flaw of the wind blew the smoke of my fire in his face, and he looked for a moment disconcerted; but recovering his self-possession he at once paddled off quietly and in a dignified manner, without diving, out to sea. About a couple of hours after, the stalking-party came back, having been as unsuccessful in their pursuit as I had been in mine; and then after a dinner of venison-steaks, which an alderman might have envied, we rolled ourselves up in our rugs, pipe in mouth, and composed ourselves to sleep. Of course in these, as in all other arctic latitudes, when the sun is always above the horizon, it matters not in the least at what hour of the twenty-four one does anything; one eats when one is hungry, and sleeps when one is tired. Towards 10 o'clock P.M., somebody awoke, and saw the sloop heading up in our direction; the party was accordingly roused, and about midnight we got on board.

Next morning the wind changed, and it threatened "dirty" weather. We tried to get into Advent Bay for shelter, but our craft was so lubberly we found it impossible. Giving up the attempt, we ran before the wind, now rising to a gale, past our bivouac of the preceding evening, on to Sassen Bay, another deep indentation on the south side of Ice Sound. Here we anchored behind a point of land terminating in a highish knoll, which afforded us some protection; and in this harbour of refuge we remained until the morning of the 22nd; when, what Deer there were in the neighbourhood being killed, or, for the time, disturbed, we grew tired of the monotony of our life, and resolved to boat home, at all risks. And now I may mention that, though I had previously, about the Alkenhorn and elsewhere in Ice Sound, made the acquaintance of the Northern Puffin (*Fratercula glacialis*), I saw very many more of them in this locality than in any other. Compared with the rest of the *Alcidæ* of the country, they are, however, rare, and they seem much more sporadic in the distribution of their breeding-stations; indeed, for the matter of that, I was never able to discover any one particular haunt of theirs. That the Northern Puffin has been with justice separated from the common *Fratercula arctica*, of which, I believe, there is no trace in Spitsbergen, I entertain very little doubt; and I shall have more to say further on concerning the comparative dimensions of the two species, which enable one to discriminate between them. But I may here remark that *F. glacialis* has never yet, so far as I know, been represented in any work; both Mr. Gould and Mr. Audubon having given figures of a third and entirely distinct species (*F. corniculata,* which I believe to be confined to the most northern parts of the Pacific Ocean) under the name proper to the Spitsbergen bird. I therefore take the opportunity of illustrating this paper by the accompanying plate (Plate VI.), executed by Mr. Wolf, from specimens brought home by me.

On the morning of the 22nd, as I have said, we started by boat for the yacht, leaving the sloop to follow as she best could. Our voyage down the Sound was uneventful. As we were nearing Safe Haven, my attention was called to a Duck flying past us, which seemed to me somewhat different from an ordinary Eider, though I could scarcely say in what manner; and one of my companions, whose seat in the boat gave him a more favourable view of the bird than did my own, assured me it had a yellow bill. I have therefore little doubt it was a King-Duck; and on reaching the yacht, late in the evening, Ludwig informed me he had been in unsuccessful chase that very day of three other birds, which he described to correspond with that species. The next day I crossed over the ridge, forming the east side of the Haven, to an accessible cliff, where Ludwig told me he had found Rotches breeding. With the help of a rope, he got up to the crevices whence issued certain croaking sounds; and on my bending the gun-picker out of my knife into a rude hook, and lashing it to the end of my walking-stick, he at length extracted from the holes two Rotches which had not been many days hatched. Queer little things they were, thinly clothed in black down, through which their blue skins appeared. While engaged in this operation, several old Rotches came round us, perching close by on the pinnacles and ledges, without much timidity; and one was caught alive in the hole with its offspring. We could not find an egg, not even a rotten one, but fragments of hatched-out shells were lying about. Ludwig afterwards showed me the site of the Goose's nest I have before mentioned.

It was placed in a recess among the rocks, at the base of the ridge, just above a low plain, which, interspersed with pools of water, extended for about a couple of miles to the sea. Returning to the yacht, we weighed anchor in the evening, and put to sea, accompanied by the sloop, which had rejoined us.

For an entire week, from the day last mentioned, I have scarcely an ornithological event to record. We were making first for the South Cape, and then for the Thousand Islands; but nearly the whole time we were enveloped in a dense dripping fog, most depressing to our spirits, and perplexing to the pilot and captain. Among other ways of passing the time, some of the ship's company took to fishing for Ivory-Gulls; or rather, I think I should say, for one Ivory-Gull, as I suspect it was the same individual bird that visited our wake on some three or four successive afternoons, timing his arrival with wonderful accuracy to hit off the emptying of the galley-pail after the men's dinner. If enticed by choice morsels of pork-fat, he would stay with us for half an hour or more. Angling has, unfortunately, never been an amusement of mine, and I understand very few of its mysteries; I therefore cannot account for our want of success on this, and indeed on subsequent occasions. The birds more than once took the bait; but even when we were scarcely moving through the water, and they had plenty of time to swallow it, something always seemed to occur just at the critical moment to prevent their being hooked; and the general result was as unsatisfactory as when I tried to fish for Storm-Petrels between Bermuda and Halifax (Ibis, 1859, p. 373).

About noon on the 4th of August, the pilot, who had been diligently taking soundings all the morning, announced that he knew where we were, and pointed out our position on the chart. A few hours afterwards, the wind veered, the fog lifted, and there sure enough was land—the east coast of the Stor Fjord—just where it ought to be. A little later and we recognized our consort, from whom we had been for some days parted. Early next morning Mr. Birkbeck hoisted his flag on board the sloop, and sailed away to the eastward among the Thousand Islands, hoping to fall in with Walruses; while the yacht, in which Ir emained, stood up the Stor Fjord. The wind being light we made but very slow progress, and the following day found us much in the same place. This time we had not as yet met with any ice, and were fully expecting to get up as far as Walter Thymen's Strait, through which we hoped our friends in the sloop might make their way from the eastward to join us. But again our expectations were frustrated. When we had ascended the Fjord about ten miles, we came to a large quantity of drift-ice, and after passing through some of it, we found to our extreme disgust that nothing but a field of "packed" ice could be seen ahead, even from aloft. As we were still some twenty miles from our rendezvous, it was certain that at least half the distance would be made up of "fast" ice, and probable that little of it would be broken up during the short remainder of the season. Sorrowfully, therefore, the order was given to turn back; and it was but a small consolation to our disappointment to be attended in the afternoon by a good many Ivory-Gulls. At one time there must have been nearly twenty in sight at once, and thirteen fell to our guns in a very short time. One of these, which I shot from the vessel, was attacked, while floating wounded on the water, by a Burgomaster, and, before the boat could reach it, was killed and its head partially divested of feathers by its big relative.

The evening of the 8th of August found us within two or three miles of the most western of the Thousand Islands, which is named by the Norwegians Russö. We sent off a boat to procure drift-wood, as we were getting short of fuel, and Ludwig went with her. He returned the next morning with two cock "North-east Birds," and reported that he had seen another, which he thought had a nest. I lost no time in going to land myself, and soon flushed the Phalarope from exactly the same spot—by the margin of a small lake—as he had done; but the bird, after a little while, flew off, and never again came in sight. We searched diligently for about a couple of hours, but nothing like a nest or a young one rewarded us. There were plenty of Eiders (but no drakes among them) and Arctic Terns breeding on the islet, which might be nearly a mile in length, and was of very varying breadth. On the south shore were stranded, in wild confusion, large blocks of ice, bones of whales, and enough drift-timber to build a ship. I also saw a family-party of Snow-

Buntings, a few Dovekies, which seemed to have young in a very low cliff, and a pair of Red-throated Divers. Some of the Terns' eggs we found were fresh—possibly their earlier layings had been taken by Walrus-hunters, who often visit this islet—but there were also a few young ones; one of which, after having been handled by me, on being liberated, swam bravely across a pool, a distance perhaps of fifty yards, encouraged all the voyage by the noisy flock of old birds overhead, which kept successively stooping in their flight to within a few inches of it. A Skua threatened it, but, seeing me prepared with my gun, let it alone. On this islet were a good many gnats, some of which seemed half inclined to bite; and on opening the stomachs of the Phalaropes Ludwig had shot, I found them crammed with these insects and their cases, mixed with a few bits of moss.

Early in the morning of the 10th of August, the sloop returned with Mr. Birkbeck and his division of our party. They had been very unfortunate with regard to the main object of their voyage, owing to the state of the ice. They had reached the Ryk-iis Islands—lying off Disco, the most eastern point of Spitsbergen proper—and landed upon them. But it was impossible to get beyond them, the ice extending in a solid "pack" far away to the eastward. Seeking a channel through it, they sailed along its edge until they arrived in sight of the lofty and rounded hills of the mysterious Commander Giles' or Gillie's land—a land so little known, that its very existence is ignored by some of the best authorities; while the only modern chart on which I have seen its outline traced, places it at least a degree too far north*.

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* In a map prefixed to Pellham's account of eight English sailors who wintered in Spitsbergen in 1630–31 (Churchill's 'Voyages,' vol. iv. p. 808) a large tract of land is laid down as extending about from lat. 76° to 78°, in long. 28° E. It is there called "Wiche's Lande", but corresponds very fairly with what I believe to be the real position of Giles' Land, which, under the latter name, has replaced it on old Dutch charts. The English Admiralty Chart of Spitsbergen, dated 1860, does not include it; nor is it alluded to anywhere in Sir John Richardson's 'Polar Regions' (Edinburgh: 1861). Norie's 'Chart of the Northern Seas' (1834, with additions to 1852) has it marked as extending northward from lat. 80°, in long. 28° to 30° E. Commander Giles seems to have flourished in the beginning of the last century, and Scoresby gives 1707 as the date of his voyage.

This they were unable to approach, and then there was nothing to be done but to regain the yacht. Worst of all, they had not come across a recent trace of either Bear or Walrus. On some of the Thousand Islands at which they touched they found great numbers of young Burgomasters, and brought a couple away with them alive, as also a young Red-throated Diver. The poor wretches did not last very long. Soon after the return of the sloop, some of us paid a parting visit to Russö and its neighbour, Round Island; on which, among other birds, a young Brent-Goose, nearly able to fly, but with bits of down still sticking to the ends of its neck-feathers, was procured. Here also were Dovekies breeding; and from the nest of one was obtained a small fish, the only ichthyological specimen we had fallen in with in the Spitsbergen seas*.

About noon we weighed anchor again, and made the best of our way back to Ice Sound, where, after being several times put off our course by long tongues of drift-ice extending far out to sea, we arrived on the afternoon of the 14th. Standing in for the Sound, I was at once struck with the change that bird-life had undergone in the last three weeks. We met with large flocks of Bruennich's Guillemots and many Rotches a long way from the land, the latter often accompanied by their half-grown young. There was also visible a corresponding thinning of the living clouds around the mighty Alkenhorn. As we passed to our old anchorage, I had a good view of a Long-tailed Skua flying along the shore, the first living one I had seen in the country. It was in the dark-brown and whole-coloured plumage; but, judging from the length of tail, was, I think, an adult bird.

On landing, we found the snow had very much disappeared, leaving exposed all manner of things—human skeletons and the foundations of an old settlement among the number—of whose existence we had been entirely ignorant at the time of our former visit. All the plants we gathered were fast perfecting their seed-vessels. We lost the sun behind the hills for an hour or two at midnight, and everything betokened that the polar summer was drawing to its close. It was quite melancholy to walk on the undercliff of the Alkenhorn; so diminished in number were its once swarming tenants. Yet a good many remained, though these were fast hastening away: some, it would seem, were in too great a hurry to leave; for on the 16th, as I was watching the young Guillemots performing their perilous descent from their natal cliffs to the sea, one (whose mother had miscalculated its powers of flight, and induced it to make the attempt too soon) fell nearly half a mile short of the water, and was rescued by Ludwig from a Burgomaster, which (notwithstanding the solicitude of its parent, whose cries, as she flew round, first attracted my attention) would doubtless have soon made short work of it. It was scarcely so big as a Rotche, but had its wings sufficiently developed to be of some service. I was much interested at thus obtaining positive evidence of the early age at which these hardy nestlings betake themselves to encounter the dangers of the deep. Some of the old Guillemots had begun to undergo an alteration in their plumage, the white feathers of winter already appearing on their sooty-black throats. The Dovekies had nearly all taken their departure from the inner waters, and most that now showed themselves were birds of the year in their pretty marbled dress of grey and white. Young Kittiwakes, with their collared necks and black-tipped tails, mixed also in the scanty flocks of this species that now presented themselves. Ivory-Gulls occasionally paid us a visit; and on the 16th I had the luck to shoot two, right and left, which I destined for the collection of a worthy member of the 'Ibis' fraternity. Early in the morning of the 17th, during a dead calm, the salt-water of the Haven was covered with a thin skim of newly-formed ice—a pretty fair hint to us to be gone. On the 18th I visited the Eiderstone, on which were more than a dozen nests still with eggs, though on the point of hatching, and I gathered a goodly bundle of down. On the 20th, going to the ridge on the east side of the Haven to collect plants and fossils, I found Purple Sandpipers congregated in a flock on the rocks. All this time my friends had been away up the Sound in the sloop. They returned on the 21st of August—having explored the South Fjord, penetrated to the furthest extremity of Sassen Bay (where a Pomatorhine Skua had been unquestionably recognized by its curiously-formed tail), and enjoyed excellent deer-stalking. On that day in the forenoon we finally heaved our anchor from its bed at the bottom of the Haven, and gazed with regret for the last time on the cold glaciers and lofty peaks whose aspect had been so long familiar to us, as with a favouring breeze the 'Sultana' sped away southward.

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* This fish was unfortunately lost during a subsequent gale of wind, when the bottle in which it was placed got broken.

Little more remains for me to say. On the 22nd, while we had not yet lost sight of Spitsbergen, the craggy pinnacle of Horn Mount still forming a fine object on our port-quarter, an Ivory-Gull appeared, but this was the last we saw. Burgomasters showed themselves on the 23rd, in attendance upon a large flock of Kittiwakes (among which was a considerable proportion of young birds) that we encountered sitting on the water. On the 24th, we had a good view of Bear Island, with its high hill, Mount Misery, as we passed some twenty miles to the westward of it; and next morning its loom was yet discernible through a murky horizon. At different times a good many Kittiwakes and Pomatorhine Skuas came about us; and one, at least, of the latter was seen on the following day, when we were approaching the Norwegian coast. Fulmars had hitherto kept company with us since leaving Spitsbergen, roaming hither and thither, as if they were looking for something that had been lost, and yet with their wonted air of indifference as to whether they found it or not—two or three beats of their pinions, and then a slanting sail, either to right or left, on their steadily-extended wings. One could not but appreciate the fanciful belief among sailors, that their bodies are inhabited by the souls of old whaling-skippers. They now all ceased to appear. The same night, the first stars we had seen for more than two months shone out, and early in the morning of the 27th of August we were close to the land; but the wind being light it was not till late in the afternoon that we dropped our anchor in the harbour of Hammerfest, and felt that we had returned to a modified state of civilization. Here, then, concludes all I have to say in this place of my personal experience of Spitsbergen and its birds.

[To be continued.]

XXI.—*Recent Ornithological Publications.*

1. English.

In the course of the past year, Mr. Gould has published the Sixteenth part of his 'Birds of Asia,' which he has solely devoted to the illustration of the ornithology of the island of Formosa; where, as the readers of this journal already know, Mr. Swinhoe has been so successfully working. We only wish that a portion of that gentleman's zeal for the promotion of Natural History animated other members of Her Majesty's Consular Service; though it is not to be expected that many of them would find a field so rich and so unexplored as our friend has done in the "Beautiful" island where he performs his official duties. Mr. Swinhoe has, in a former volume of the 'Ibis,' so well described the characteristic features of Formosan Ornithology, that we need only refer to his three masterly articles on that subject (Ibis, 1863, pp. 198, 250, and 377). Mr. Gould gives figures of the following sixteen birds:—

Urocissa cærulea.
Euplocomus swinhoii.
Bambusicola sonorivox.
Pomatorhinus erythrocnemis.
Gecinus tancola.
Picus insularis.
Garrulax ruficeps.
—— pœcilorhyncha.
Myiophoneus insularis.
Megalæma nuchalis.
Pericrocotus griseogularis.
Garrulus taivanus.
Numenius rufescens.
Hypsipetes nigerrima.
Parus castaneoventris.
Alcippe brunnea.

All these species were described by Mr. Gould in the Zoological Society's 'Proceedings' for 1862 (pp. 280–286), but they were all discovered by Mr. Swinhoe's unassisted labours.

It is not often that we are favoured with an ornithological paper in the publications of the Linnean Society. Since the appearance, some seven or eight years ago, of that remarkable one on the "Geographical Distribution of the class *Aves*"—the truth of the principles enunciated in which has been so unanimously admitted, and which has placed the important branch of the science to which it related on a basis as sure as it was novel—we can hardly call any others to mind. Dr. John Shortt's "Account of a Heronry and Breeding-place of other Water-birds in Southern India", however, occupies a few pages in the last number of the 'Journal of the Proceedings' (vol. viii. p. 94) of this venerable body. Finding an *Ibis* mentioned, we naturally were curious to hear news of our relatives in Madras. The species being called in the text *Ibis falcinellus*—which a foot-note considerately informs us is a synonym of "*Falcinellus igneus,* Gould"—we were somewhat surprised as we read on to find its eggs described as being "of a dirty-white colour." Aberration in the appearance of eggs being, however, an article of our creed, we were inclined to let this pass; but the next few words enlightened us—"The birds are white, with black head, feet, and neck, and have a long curved black bill. The head and neck are naked," &c. It was plain that here was a case of mistaken identity. Instead of our "Glossy" relative, the Indian representative of our own "Religious" selves, *Ibis melanocephala,* was obviously intended. Now, we have no complaint to make against Dr. Shortt. In March 1864, when he last visited the "Hunter's Rest," we believe Dr. Jerdon's Third volume was unpublished; and though, even accidentally, to mistake one Ibis for another is a most serious offence, it is not an unpardonable crime in one who has no sources of information at hand; but surely we have a right to ask the Council of the Linnean Society, who, we believe, still keep up the old system of referring to some person or persons all papers intended for the Society's publications, to whom was Dr. Shortt's paper submitted? Another most grotesque error in the same article is printing *Graculus siennensis* for *G. sinensis*!

We are indebted to Mr. J. B. Rowe for a copy of a list of Devonshire Birds*, which he has drawn up. The author mentions that five-and-twenty years having elapsed since the publication of a list of the birds of that county, he has ventured to undertake the task, in the compilation of which he has had the valuable assistance of Mr. Gatcombe, a gentleman well known to ornithologists. The last list of Devonshire birds, and the one to which Mr. Rowe alludes, is that of Dr. Moore, in Charlesworth's 'Magazine of Natural History' for 1837. Of course since that time many changes have been wrought in the physical appearance of the county, which have had a corresponding effect upon its *Ornis*. Devonshire was the county of Montagu, and, for this reason alone, its birds would possess an interest in the eyes of ornithologists; but it is also by nature so favourably situated as hardly to require such a recommendation to the modern and severer school of bird-students. Mr. Rowe enumerates no less than 268 species as having occurred within its borders—a very large number, it is true, but perhaps not more than might be expected when we take into consideration its great extent of coast-line. This number, however, we think, might be slightly reduced. We should hardly have thought that *Picus martius* and *Lagopus rupestris* (lege *mutus*) had any right to be included as Devonian species. The same, though on different grounds, may be said of *Chenopis atratus*; and *Crex foljambii* is, of course, only a synonym for *C. minuta*. On the other hand, among the rarities which seem to have a rightful claim to admission, are *Aquila nævia, Melanocorypha calandra*—recorded as British for the first time—*Chrœcocephalus ichthyaetus* and *Alca impennis*. The Calandra Lark was discovered in the collection of a bird-preserver at Plymouth, and upon inquiry was found to have been obtained in that neighbourhood, while it "was supposed by its possessor to be a specimen of the Shore-Lark." We did not know before that *Lagopus scoticus* ever extended its range so far to the south as Dartmoor; but, as only two examples are mentioned as having been obtained, we suppose its occurrence is merely accidental. We regret to find that *Circus cineraceus*, a bird which ought to possess an especial interest with the worthies of Devon, is characterized as being "very scarce." *Tetrao urogallus* is, of course, an oversight for *T. tetrix*.

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* A Catalogue of the Mammals, Birds, Reptiles, and Amphibians indigenous to or observed in the county of Devon. By J. Brooking Rowe, F.L.S., &c. Plymouth: 1863. (London, Van Voorst.)

We think the few pages on the 'Birds of Harrow,' communicated by the Messrs. Bridgeman to a recently published work on the Botany of that neighbourhood*, deserve a passing notice in this Journal, as being, so far as we are aware, the first attempt of the kind made by the boys of any of our Public Schools. We welcome this little list as an earnest of what may be hoped for from the rising generation, and with the greatest cordiality congratulate its authors on their auspicious essay.

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* The Flora of Harrow. By J. C. Melvill. With notices of the Birds of the neighbourhood, by the Hon. F. C. Bridgeman, and the Hon. G. O. M. Bridgeman. London: 1864 (Longmans).

In a note (E) appended to the second edition of Mr. G. A. Rowell's pamphlet 'On the Beneficent Distribution of the Sense of Pain'*, that gentleman inserts an abstract of a paper read before the Ashmolean Society of Oxford, and intended to show that Mr. Darwin's great theory fails to account for the peculiar instinct which leads the Cuckoo to lay her eggs in the nests of other birds. We desire here merely to call the attention of our readers to Mr. Rowell's publication, and will only remark that the parasitic habits of *Cuculus canorus* are not more inexplicable than the parasitic habits of other animals. It is the isolation of the circumstance (as regards British Birds) which makes it seem so unintelligibly strange to those persons whose acquaintance with ornithology is limited to the species inhabiting this country. The power of fascination successfully exercised by the Cuckoo appears to us, like other cases of fascination, much harder to be accounted for on Darwinian principles.

2. FRENCH.

For some reason or other there is a dearth of new ornithological publications in France. In our last Number we could not find one work to notice, for nothing seems to have been recently hatched. Are our lively neighbours engaged in an incubation which will end in a grand *coup d'éclosion,* or what? The countrymen of Buffon and Brisson, Savigny and Vieillot, Lesson and Prince Charles-Lucien—it would be easy to continue the illustrious list—are surely not tired of ornithology? We must fall back upon our respected contemporary, the 'Revue et Magasin de Zoologie,' in this our time of scarcity; and yet its pages for the past year do not offer an over-abundant supply of sustenance to the ornithological reviewer always craving for fresh food. M. Marchand supplies a series of figures (which, though rather coarsely drawn, are not without merit) of nestling-birds, to illustrate the branch of our science to which he is devoting himself, as formerly noticed in this Journal (Ibis, 1863, p. 355), and also continues (pp. 3, 33, and 378) his catalogue of the birds observed in the Department of Eure-et-Loir. M. Coinde has a note (p. 5) on insectivorous birds, showing that many of the *Scolopacidæ* are great benefactors to mankind. M. Fatio (p. 65) makes some observations on the reproductive organs of *Accentor alpinus.* The same gentleman has also an article (p. 122) on the appearance of *Syrrhaptes paradoxus* in Europe; in the course of which he states that two specimens were killed near Geneva towards the end of August 1863; while to this the Editor appends a notice, by M. Ernest de Saulcy, of two more examples, "d'une beauté remarquable," killed at Hauconcourt, near Metz, on the 9th of February, 1864—being the latest date of the occurrence of this persecuted species that we are aware of. There is also a translation (p. 97), by M. Alphonse Gaillard, of a portion of Conservator Meves's "Contribution to the Ornithology of Jemtland," mentioned in the 'Ibis' for 1862 (p. 182), containing the descriptions of some five-and-twenty young birds, which will be highly useful to those who cannot read them in the original. M. Althammer records some facts (p. 366) relating to a pair of *Melopsittacus undulatus,* which escaped from confinement in the Tyrol, in April 1862, and which seem not only to have passed the two following winters among the mountains, but also to have bred there. The Baron H. Aucapitaine gives an account (p. 409), apparently on unquestionable authority, of an aged Macaw, "Aracanga"—quære *Ara macao* (Linn.)?—which was brought from Spanish America in the year 1799 or 1800, and, though quite blind, was still living on the 5th of October last in Corsica, with Madame Grassi, its owner. The longevity of the *Psittacidæ* in confinement is pretty well known; but many of our readers may not be aware that the "oldest inhabitant" of the Regent's Park Gardens is an example of *Coracopsis vasa,* which was presented to the Zoological Society on the 12th June, 1827, and formed the subject of an article by Mr. Vigors in the 'Zoological Journal' for the same year (vol. iii. p. 240)!

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* London: 1862 (Williams and Norgate), 8vo, p. 61.

3. ITALIAN.

We hail the appearance of Count Salvadori's 'Catalogue of the Birds of Sardinia'* as a real and most valuable acquisition to our knowledge of European ornithology. The writer is evidently not only well "posted-up" in his subject generally, but appears to be a most accurate field-naturalist, and, we should imagine, also a good sportsman. His rectification of Signor Cara's mistakes is itself a benefit to science, and we hope we may hereafter enrol him among the list of our contributors. The absence of *Alauda cristata* from Sardinia is certainly a very remarkable fact—far more so even than the curious circumstance of its non-occurrence on the north side of the Straits of Dover, while it is so plentiful between Calais and Boulogne. We particularly commend to our readers' attention Count Salvadori's account of *Sturnus unicolor,* which a friend of ours, who has made three visits to the island, assures us he can confirm in every particular; and, in conclusion, we can only say that we hope each country in Europe may at no distant time possess an ornithologist so conscientious as the one whose work we are noticing.

4. GERMAN.

No doubt many of our readers who are egg-collectors possess in their cabinets specimens inscribed "Zeleb." followed by certain mystic characters indicating a date; but perhaps few of them know that they owe these specimens to Herr Johann Zelebor, a Conservator of the Imperial and Royal Museum at Vienna, a naturalist who several years ago made a journey to the south-eastern frontiers of the Austrian dominions, where he reaped a rich oological harvest. Since then we have heard of him as being one of the members of the celebrated 'Novara' expedition; and in 1863 he performed another "Acquisitions-Reise" to the Theiss and Lower Danube, an account of which appears in the numbers of the Vienna 'Jagd-Zeitung' for last year. The principal object of this journey seems to have been to procure living examples of various animals for the Emperor's menagerie at Schönbrunn; but the series of letters recording his progress, which he has addressed to the Editor of the periodical we have named, contains some interesting facts relating to the private life of several rare European birds—*Accipitres, Grallæ*, and *Anseres*. The abundance of some of these species is shown by his captures. In the mountains of Fruska-Gora he obtained, among other live birds, nine Imperial Eagles (*Aquila mogilnik*), and seven Lanners (*Falco lanarius*), besides one Saker (*F. sacer*). Midway between Tultscha and Ismail he found a large breeding-place of various Herons, including *Ardea garzetta* and *A. comata*, with *Falcinellus igneus* and *Carbo pygmæus*. The "pearl of the swamp-birds," *Ardea egretta*, is not so sociable as its allies, and breeds far in the marshes, where the reeds are thickest and highest; nevertheless Herr Zelebor obtained seventeen examples of it, all in the fullest beauty. The Mute Swan (*Cygnus olor*) appears to breed here also, and he procured ten Cygnets in their downy plumage. A more scientific account of his spoils will be found in the 'Journal für Ornithologie' for last year (pp. 69–74), from the pen of Herr A. von Pelzeln. Surely his success should tempt some member of the B. O. U. to visit a country so interesting, so accessible, and so little known to ornithologists!

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* Catalogo degli Uccelli di Sardegna, con note e osservazioni di Tommaso Salvadori. Atti della Società Italiana di scienze naturali, vol. vi. Milano: 1864.

5. DANISH.

We have received from Herr Fischer, of Copenhagen, copies of two short papers which he has published on the breeding of the Nutcracker (*Nucifraga caryocatactes*)*. As that gentleman, however, with the greatest liberality has also entrusted us with the nest and four specimens of this bird's eggs, we have thought it due to his courtesy to exhibit them at a meeting of the Zoological Society. They were taken on the 23rd of March, 1864, on the island of Bornholm—the same locality whence the nest and nestling formerly exhibited to the Zoological Society (P. Z. S. 1862, p. 206) were obtained. The account which our friend gives us of the nidification of this species agrees very fairly with that published in 1862 by Herr E. Schütt, as observed by him in the Duchy of Baden, and reprinted in a former volume of this Journal (Ibis, 1862, p. 365). The eggs sent us by Herr Fischer are very lightly spotted, but it is quite likely that better-marked specimens will be procured. One or more of them, however, will be figured in the Zoological 'Proceedings' for the present year; so that it is unnecessary for us to insert a particular description of them here.

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* Yderligere Bidrag til Nöddekrigens Ynglehistorie. Ved J. C. H. Fischer. Kröyers Tidsskrift, 3. R. 2. B. 1863.

Ægget af Nöddekrigen (*Caryocatactes guttatus*). Ved J. C. H. Fischer. Kröyers Tidsskrift, 3. R. 3. B. 1864.

6. SWEDISH AND NORWEGIAN.

To Mr. Malmgren's 'Notes on the Bird-Fauna of Spitsbergen,' reference has been already made in the present number (*anteà*, p. 200); and as the continuation of that article will include a more precise criticism of this gentleman's excellent paper, we need not anticipate our own remarks upon it.

We have lately had the opportunity of perusing Mr. Collett's 'Review of the Ornithological Fauna of the Neighbourhood of Christiania'*, a book which cannot but be useful to the many English travellers, capable of understanding Norsk, who yearly pass through the modern capital of Norway, and all of whom consider it more or less "the right thing" to profess an interest in the ornithology of the wild country they are visiting. The writer has evidently studied his subject with great care and diligence, both in the field and in the museum. He also acknowledges the assistance he has received from Professors Esmark and Rasch, of the University of Christiania. But all this has not prevented him from falling into a few important errors: amongst others, he mentions the occurrence of *Syrrhaptes paradoxus* in Norway in both 1861 and 1862, whereas 1863 was the year of the great irruption, and we have been unable to hear of its occurrence in that country previously. Mr. Collett tells us that the list of birds observed in Norway comprises 244 species; and of these, 220 have been noticed as occurring, and 169 as breeding, in the Christiania district, which, by his definition, includes a circle described by a radius of about eighteen English miles from that town. The book is altogether an interesting one, and will be especially so to tourists in Norway who desire to pursue ornithology. To such we accordingly recommend its study, being confident that they will derive more information from it than from several other works of much greater pretension that have been recently published.

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* Oversight af Christiania Omegns Ornithologiske Fauna. Af Robert Collett, Stud. juris. Nyt Magazin for Naturvidenskaberne Physiographiske Forening, B. iii., H. 3. Christiania: 1864.

7. Russian.

We have been much disappointed to find that Professor von Baer's article in the St. Petersburg 'Bulletins'*, on the extinction of *Alca impennis,* in continuation of the series of papers on extirpated animals commenced by him in the same publication, is simply a translation into German of part of Professor Steenstrup's well-known and valuable monograph of that bird. Not a single new fact is added, nor is a single new deduction drawn from the old ones, as given by the illustrious naturalist last named. To our German brethren, who disapprove of the use of the Danish language, Professor von Baer's paper will be a boon; but we are somewhat surprised to find the Imperial Academy of the Russian capital sanctioning the publication of a mere translation in their 'Transactions.'

8. American.

Mr. D. G. Elliot's new work†, which has now reached its second number, is a book on a scale corresponding to the 'Monograph of the Genus *Pitta*' by the same author, with which most of our readers are acquainted: it contains full-sized coloured representations of every species of the group in question, drawn by the author, and accompanied by descriptive letter-press. In the First part are figured—

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* Ueber das Aussterben der Thierarten in physiologischer und nicht physiologischer Hinsicht überhaupt u. s. w. Von K. E. von Baer. Zweite Hälfte, erste Abtheilung.—Bulletin de l'Académie Impériale des Sciences de St. Pétersbourg, vol. vi. p. 514.

† A Monograph of the *Tetraoninæ,* or Family of the Grouse. By Daniel G. Elliot, F.Z.S. New York: published by the Author, No. 27 West Thirty-third Street. (London: Williams and Norgate.) Imperial folio.

Bonasa sabinii.
Canace canadensis.
Lyrurus tetrix.
Pediœcetes phasianellus.
Bonasa sylvestris.
Lagopus scoticus.

While the Second part supplies illustrations of

Centrocercus urophasianus.
Dendragapus obscurus.
Pediœcetes columbianus.
Canace franklini.
Bonasa umbelloides.
Lagopus leucurus.

Some of these generic names may be new to our readers; we may therefore refer them to Mr. Elliot's paper in last year's 'Proceedings of the Philadelphia Academy' (p. 23) for an explanation; and we may remark that the "*furor genericus*," of which we recently spoke in relation to the last part of the 'Museum Heineanum,' is certainly not confined to this side of the Atlantic. Mr. Elliot says of *Pediœcetes columbianus*, that it has "never been obtained to the east of the Mississippi." But we are assured by Mr. Sclater that this species certainly occurs in tolerable abundance on the Upper Sainte Croix, in Wisconsin: when, in September 1856, on his journey through the woods from Superior City to St. Paul, he shot and ate several examples.

Taking the circumstances under which it is produced into consideration, we think Mr. Elliot's work is most creditable to the enterprising spirit which prompts him; and we trust no ornithologist who can afford to possess *ouvrages de luxe* will omit to secure a copy.

* * *

Our excellent friend Professor Baird is distributing the sheets of his new work* "in advance of the completion" of the book, "with the view of eliciting criticisms and suggestions from Ornithologists and Naturalists." We have received nine and a quarter of these sheets from the author; and we need only say, now, that the work appears most fully to sustain his great reputation; for in its present unfinished state it would be somewhat premature to give a longer notice of it; but that it will be a most useful book to all who wish to become acquainted with American ornithology, is already very evident.

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* Review of American Birds in the Museum of the Smithsonian Institution. By S. F. Baird. Part I. North and Middle America. Washington: 1864.

XXII.—*Letters, Extracts from Correspondence, Notices, &c.*

We have received the following letters, addressd "To the Editor of the 'Ibis'":—

Takow, S.W. Formosa,
1 December, 1864.

Sir,—I have to address to you my monthly report of progress for the 'Ibis'. I must begin with an addition to the Chinese avifauna in the shape of

Merops philippensis, Linn., an immature specimen of which was shot at Swatow in the beginning of winter, and forwarded to me by Consul Caine. The morn of our researches here is yet grey, though the rosy hue of promise is commencing to tinge the horizon. I only reached this place on the 7th of November, but my net is already spread, and there is every prospect of a successful haul of new species, a few of which I hope to advise you of in my next letter.

On the 15th of November I procured a fine male *Circus spilonotus*, Kaup; and on a subsequent occasion I watched two females, which, however, fought shy of me. The male was shot by a friend between this place and Taiwanfoo. Its total length was 21 inches; tail 9·75 in.; tarse 3·5 in., feathered down the front for about 1·25 in.; middle toe and claw 2·5 in. Legs rich chrome-yellow, ochreous on the tarsi. This specimen is more mature than that figured in the 'Ibis' (1863, Plate V.), the tibial feathers and under parts from the breast downwards being pure white. The feathers of the breast have narrow black medial streaks; the head, especially its sides and cheeks, is blacker; and the wings are greyer than in the subject of the plate. There is no nearer approach to the appearance of *C. melanoleucus* in the upper parts. From the state of the quills in this specimen, this species appears to have an autumnal moult.

This part of Formosa scarcely feels the north-east monsoon, and consequently its winter is almost tropical. Many birds that in Southern China and Tamsuy are only summer visitants, are here daily to be met with now, and, I suspect, all the winter through. *Rhynchæa sinensis,* sive *bengalensis,* sive *capensis* (for they all appear to be one and the same species) is not uncommon.

I have handled three, two males and one female. They vary greatly in size, but the female is the largest. They are all in the same dress—the *green* plumage, which appears to be the winter garb, and not, as I had supposed, peculiar to the male alone. Bill yellowish-olive; legs greenish-yellow; eyes brown-black. I dissected two males and one female of this species. In neither sex was the trachea convoluted. There were, of course, no laryngeal muscles; the bronchial tubes were very short, their osseous rings being thicker and more widely set than in the trachea; each tube was separated from the trachea by a triangular membrane, ossified round, except at the apex. The testes were ·4 in. long by nearly ·2 in. broad, longo-ovate, the right one the smaller. Stomach oval, 1·2 in. long, ·9 in. at greatest breadth, and ·7 in. at greatest depth, shaped like two saucers inverted face to face, with large lateral radiating tendons. Epithelium thick, containing *detritus* of marine shells and one small univalve entire. The contents of the stomachs of both males were exactly the same. The intestine was 21 inches long, and from ·25 to ·15 in. wide. Cæca situated 1·1 in. and 1·3 in. from the anus, about ·18 in. long and ·1 in. wide, rather thicker at apical end. About 8·25 in. from anus occurs a curious conical maggot-like excrescence on the intestine, ·4 in. long by ·15 in. at its base. Is this a supplementary cæcum placed on the small intestine? The proventriculus is smooth on its external coat. The large female had only 20 inches of intestine, and the curious cæcal appendage occurred about 8·75 in. from the anus. Right cæcum situated 1·2 in. from anus, and 2·3 in. long; left one rather higher up, and 2·5 in. long; both vermiform. Stomach contained small *Crustacea*, and one small black pebble.

A *Gallinago burka*, ♂, with fourteen tail-feathers, examined on the 24th of November, had the bill yellowish-olive for two-thirds of its length; apical part deep brown. The legs are light olive-ochre, touched at the joints with grey; claws black. Total length 10·75 in.; bill, from forehead, 2·6 in.; wing 5·2 in.; tail 2·5 in.; bare part of tibia ·6 in.; tarse 1·2 in.; middle toe and claw 1·4 in. Bronchi comparatively longer than in *Rhynchæa*; their rings rather thinner than those of the trachea; the triangular membranous interval wanting, the tracheal rings coming quite down to the last peaked ring, which is more than double the thickness of the others. Proventriculus externally granulose. Stomach somewhat small and heart-shaped, ·8 in. long by ·55 in. wide; contents, green juice and grit. Intestine thin, 12 inches long, and carrying the maggot-shaped cæcal appendage, which was ·3 in. long, at 5 inches from anus. At 1 inch from anus the true cæca occur; these are from 1 to 1·1 inch long, and vermiform. *Gallinago media* of Europe has *fourteen* tail-feathers, and, as I learn from Temminck's 'Manuel' (vol. iv. p. 433), *G. brehmi* has *sixteen.* Our bird therefore cannot be referred to this last. The rarer bird that I have met with having only *twelve,* must, I suppose, be referred to the variety *G. delamottii* of Baillon*.

A *Gallinago stenura,* ♂ (Nov. 24), has eight long thin lateral rectrices, and ten median ones, the sixth from the middle on either side being much thinner than the five proper ones, and the total number of tail-feathers twenty. Five to seven is the usual number of lateral feathers. The bill has the basal half light olive, the apical deep brown. Legs similar to the foregoing; head higher, with rounder forehead. Length 10 in.; bill, from forehead, 2·15 in.; wing 5 in.; tail 2 in.; bare part of tibia ·4 in.; tarse 1·25 in.; middle toe and claw 1·5 in. The cæca proper are placed 2 inches from anus, like small ears, nearly ·2 in. long, adovate, one slightly higher than the other. About 7·5 in. from anus occurs the peculiar excrescence before mentioned; it is ·4 in. long. Intestine 17 inches long. Proventriculus smooth; stomach small and heart-shaped.

In *Gallinago solitaria,* Hodgson (*G. megala,* mihi), I found the same short cæca as in *G. stenura,* but I appear to have overlooked the excrescence on the intestine. These two last Snipes are closely connected in their external form, the one being larger and having fewer rectrices, especially the thin lateral ones, than the other. They both differ from *G. burka* in the narrowness of the apical portion of the bill, and in the close zigzag streaking of the under wing-coverts, as also in the high and rounded shape of the head. In the presence of the small tympanic membrane, dividing the trachea from each bronchus, they approach *Rhynchæa;* but in the length of cæca that form is approached more nearly by *G. media,* while at the same time this is alienated from the other two, whose cæca are very minute. All these, however, have the same kind of stomach, while that of *Rhynchæa* wanders off in shape towards that of the *Rallidæ.* They all agree, I suspect, in having the curious cæcal excrescence. *Rhynchæa,* as might be guessed from the want of nervous development at the tip of the bill, is more a surface-feeder than the true Snipes, and, as I have found, feeds on small mollusks and crustaceans: hence the need of the powerful stomach.

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* We have never had the pleasure of inspecting an undoubted specimen of the supposed *G. brehmi*; but we should like to know in what way it differs from the American *G. wilsoni,* which also has *sixteen* rectrices. The greater length of the external feathers, on which Sir William Jardine dwells as a characteristic of the supposed *G. brehmi* (Contrib. Orn. 1849, p. 134; and *ibidem,* 1850, p. 17), does not seem to us to be an important feature. *G. delamottii,* with only *twelve* rectrices, *may be,* we think, founded on specimens of the common *G. media* which, being obtained in the moulting-season, have their tails imperfect.—Ed.

The sternum of *G. stenura* is larger and longer, especially in the keel, than that of *G. burka,* and the crest of its keel is more protracted and protrudes further forward beneath the apex of the furculum. It has not the tubercular excrescence that distinguishes the upper or concave line of the crest of the keel in *G. burka.* In other respects the two bones are very much alike, except in some trifling points, which may be attributed to differences in age or sex. I have not got a sternum of *G. solitaria* by me.

The sternum of *Rhynchæa* is Snipe-like. The female's is nearly one-third longer than that of the larger male. The most striking differences are:—The lateral bony support of the single open foramen, which is very short and weak in the true Snipes, is, in this bird, strong, and advances to nearly the level of the hind-line of the sternum. The concave edge of the keel, instead of protruding the crest, lies nearly within the vertical plane. The apex of the furculum is a little outside the plane of the crest, instead of being pushed well within it. The coracoids are larger and more dilated at their basal wings, and the scapulars are a fair bit longer.

A Rail (*Rallus striatus*) that I examined had the remains of grasshoppers in its stomach.

I shot a female *Dendrocitta sinensis,* var., the other day. It was sitting in the middle of a large tree, uttering a loud hoarse chatter. Its stomach contained remains of *Coleoptera,* and several hard black seeds.

Anthus richardi is pretty common here. *Buphus coromandus* is scattered in small parties among cattle; a few yellow feathers still remain about their heads at this season.

The Button-Quails (*Turnix*) bother me immensely; but I will not trouble you with any remarks till I find some clue to unravel the mystery of their variations.

If I have dwelt too long on the Snipes, pardon my garrulity. It is a subject that interests me much.

I am, &c.,
ROBERT SWINHOE.

Auckland House, Willesden,
February 24, 1865.

SIR,—As Mr. A. G. More, in his paper "On the Distribution of Birds in Great Britain during the Nesting-season" (Ibis, 1865, pp. 1–27), does not mention Subprovince 8 as a locality for the Pied Flycatcher, I copy the following from the 'Flora of Harrow' (London: 1864), p. 99:—

"Pied Flycatcher. (*Muscicapa atricapilla.*)

"I know of one authenticated instance of the occurrence of this rare bird here: a nest with three eggs was taken in the Grove, about the year 1836, and the eggs are still preserved."

I am, &c.,
CHARLES B. WHARTON.

SIR,—I have read with much pleasure Mr. Tristram's notes on the nesting of *Cypselus galilæensis,* Antinori, published in the last Number of the 'Ibis' (page 76 *et seq.*). As I am now engaged in preparing some notes on the species of this genus for a paper to be read before the Zoological Society, it may interest your readers to learn that, by aid of specimens submitted to my examination by several friends and correspondents, I have ascertained that the range of this Swift is a very extensive one. In the first place, I find it impossible to separate the Palestine bird from the Indian *Cypselus affinis*, Gray (see Jerdon's 'Birds of India,' vol. i. p. 177). Specimens in Mr. Gould's possession, obtained by Captain Burgess in the Deccan, seem absolutely inseparable from those in Mr. Tristram's collection. This Swift, therefore, as recorded by Jerdon, is found all over the peninsula of India, from the Himalayas to the extreme south, including Ceylon. There are specimens from Kurrachee in the British Museum. It is likewise found throughout the continent of Africa, excepting the northern parts. Antinori, its first discoverer in Palestine, records its occurrence in Sennar. Hemprich and Ehrenberg found it in Abyssinia; and upon their specimens Streubel established his species *Cypselus abyssinicus* (Isis, 1848, p. 354). Under the latter name, it will be found figuring in Hartlaub's well known volume on the 'Birds of Africa.' Mr. Otto Finsch, the Curator of the Ornithological Collection at Bremen, tells me that he cannot distinguish a West-African specimen, obtained in the Island of St. Thomas, from the Indian bird. And the same fact has been noticed by Sir William Jardine (Contrib. to Orn. 1849 and 1851). Lastly, there is a skin in the British Museum marked as from the Cape, and, as I am informed by Mr. Finsch, a specimen in the Bremen Collection from the same locality.

A nearly allied but perfectly distinct species, is *Cypselus subfurcatus*, Blyth, which ranges from China, through Siam, to Malacca and Sumatra. This appears to be the bird described and figured by Cassin (Proc. Acad. Philadelph. v. p. 58, pl. 13) as *C. leucopygialis*. These two species together form a distinct section of the genus *Cypselus*, distinguished from their brethren by their short, nearly square tail.

I am, Sir,
Yours, &c.,
P. L. Sclater.

11 Hanover Square,
March 1st, 1865.

March 22, 1865.

SIR,—In the 'Ibis' for 1863 (page 366) there is a note from me on the subject of *Accipiter virgatus* and *A. gularis*. I now find that, at the time of writing that note, I had not seen the true *A. gularis*, of which a pair has just been sent me by MM. Verreaux from the island of Formosa, together with a pair of *A. virgatus*, also from Formosa, thus proving that both species inhabit that island. On comparing the two species, it was at once evident that they could not be confounded, as, although the specimens of *A. gularis*, which appeared to be not fully adult, corresponded to some extent in their colouring with examples of *A. virgatus* of a similar age, they were fully one-third larger than the birds of the same sex in *A. virgatus*; and, moreover, the middle toe in *A. gularis* is somewhat shorter in proportion than in *A. virgatus*. I may here add that the middle toe of *A. virgatus* is of extraordinary length, considerably exceeding that of a neighbouring species of similar size, *A. rhodogaster*, from Celebes, which, in its turn, has the middle toe longer than that of the small Chinese Sparrow-Hawk, *A. stevensoni*; in fact the latter has the smallest and feeblest foot, in proportion to its size, of all the Sparrow-Hawks with which I am acquainted.

Of course, in comparing the above-named species, it is needful that the comparison should be made between individuals of the same sex. I am, &c.,

J. H. GURNEY.

Dr. G. Hartlaub has kindly sent us the following description of CHALCOPELIA BREHMERI, a new species of Pigeon from the Gaboon :—

"Supra intense ferrugineo-rufa, subtus dilutior, in lateritium vergens; capite cinereo, fronte pallidiore, *sincipite dilute rufescente*; gula obsolete fulvescente; remigibus nigricantibus, extus et (latius) intus rufescente limbatis; subalaribus et tertiariis rufis, his nigro fasciatim notatis; regione periophthalmica pallide rubescente: rectricibus quatuor mediis dorso concoloribus; *extima et secunda cinereis, fascia lata ante apicem dilute cinereum nigra notatis, extremo apice rufescente; tertia apice toto rufo*: rostro nigricante.

"Long. $8\frac{1}{2}''$; rostr. a fr. $7'''$; al. $4''$ $6'''$; caud. $4''$; tars. $11'''$.

"Nearly allied to *C. puella*, but differing in the reddish colour of the forehead and the rectrices. It is also smaller than *C. puella*.

"Spec. unic. in Mus. Bremens.

"Hab. Gaboon: Mr. Brehmer."

With reference to Mr. Sclater's note on *Dendrœca chrysoparia* (*anteà*, p. 87), that gentleman wishes us to state that the *second* example mentioned (p. 88) as being "without any label, but probably an immature male" of that species, was, as he has just heard from Mr. H. E. Dresser, shot by Mr. Dresser himself near San Antonio, Texas, and not received from Dr. Heermann. It is therefore, in all probability, to be referred to *D. virens*, having been shot in company with others of that species, and not to *D. chrysoparia*.

Mr. John Hancock has been kind enough to submit to our inspection the specimen of the Pipit in his collection, which we mentioned in our last Number (p. 116) as having been obtained in this country. This bird, which was shot from the nest at Chepstow, in Monmouthshire, 18th April, 1854, appears to us to be probably a female of *Anthus rupestris*, Nilsson, the differences between which and our own indigenous *Anthus obscurus*, however, seem to be so slight that we rather hesitate to regard them as forming specific characters. They consist, so far as we can ascertain, merely in the presence of a bright buff or pale cinnamon tinge on the breast of the male in *A. rupestris*, and, perhaps, in that form being of a slighter build than *A. obscurus*. In the female of the so-called *A. rupestris*, the warm colour is much more faintly indicated; in some specimens it is doubtful whether it exists at all. The outer tail-feathers, which in *Anthus spinoletta* afford so sure a diagnosis, are in *A. rupestris* just as dingy as in *A. obscurus*. Two Pipits, killed on the 7th March, 1864, near Norwich (see 'Zoologist,' p. 9109), have also been kindly lent us for comparison by Mr. Stevenson. One of them, which we suppose to be a male, exactly corresponds with males of *A. rupestris* from Sweden; the other, a presumed female, is hardly to be distinguished from females of *A. obscurus*; but the company she was keeping, at the time of her death, makes it probable that she also should be referred to *A. rupestris.* We imagine that the prevalent form of Rock-Pipit in Scandinavia is *A. rupestris*; but that *A. obscurus* occurs there as well we are assured by Mr. Hancock, who has also favoured us with the loan of a fine male *A. rupestris* from the neighbourhood of Dieppe. We trust our readers will give the subject their attention during the ensuing season, and will report to us their observations upon it.

In our last Number (*anteà,* p. 104) we suggested the possibility of the specimen of *Larus* or *Rhodostethia rossi,* which is now in the Derby Museum of Liverpool, being identical with that which is known to have been possessed by the late Mr. Joseph Sabine. We have since heard from Mr. T. J. Moore that he has made a search among Lord Derby's memorandums, and finds that the example now at Liverpool was obtained in the year 1835 from Mr. Gould; so that it is probably not identical with that of Mr. Sabine, who, prior to 1831 (F. B.-A. vol. ii. Introd. p. xii), had transferred his collection to the Andersonian Institution of Glasgow—where, however, we have looked, and looked in vain, for this valuable specimen, as well as for several others which we have reason to believe were formerly in that gentleman's possession. As the subject is one of some little interest, we should be glad if any of our readers could inform us whether this species was ever included in Mr. Sabine's contribution to the Andersonian Museum; and if it was, what has since become of it.

Mr. Osbert Salvin has called our attention to the fact that Mr. Lawrence's recently described *Corethrura guatemalensis* (*anteà,* p. 106) is, in all probability, identical with the already known *C. rubra* (Sclater and Salvin, P.Z.S. 1860, p. 300).

Mr. Edward Newton writes to us from Mauritius:—

"On reading Dr. Kirk's paper on the 'Birds of the Zambesi Region' (Ibis, 1864, pp. 307–339), I am much struck with the similarity between some of the Zambesi native names of birds and those applied by the natives of Madagascar to more or less kindred species. For instance, 'Chapungo' the Zambesian name for *Helotarsus ecaudatus,* and 'Papango,' the Malagash name for *Milvus parasiticus*; 'Sungwe,' the Zambesian for *Nectarinia amethystina,* and 'Schonwee,' the Malagash for *Nectarinia angladiana*; 'Khanga,' Zambesian for *Numida mitrata,* and 'Akonga,' Malagash for *Numida tiarata*; 'Soriri,' Zambesian for *Dendrocygna personata,* and 'Chururu,' Malagash for *Dendrocygna viduata*—the last, evidently, from its cry. It certainly shows the African descent of a portion of the population of Madagascar; and the language is probably kept up by occasional fresh importations of slaves from the continent."

It gives us sincere satisfaction to announce that Mr. Gould has in preparation a 'Handbook of the Birds of Australia,' the first volume, at least, of which we may hope to see published in the course of a few months. As all our readers know—and many of them from their own experience—it has long been a matter of regret that no handy book on the ornithology of the great island-continent existed; and the recent appearance of Dr. Jerdon's work on the 'Birds of India' has only made the want of such a book more deeply felt. This want it is Mr. Gould's intention to supply, and we need scarcely say that there is no ornithologist living who is so competent to the task. The new Handbook will not be merely a reprint of the letter-press from the author's well-known and larger work on the 'Birds of Australia'—but will contain much more original information on the subject, which has been furnished him by his numerous correspondents in that country, as well as a good deal of other material from independent sources. We are sure that the execution of this project will add largely to the obligations under which naturalists lie to Mr. Gould; while we think we can as confidently rely on its success, in whatever aspect it be regarded.

Professor S. F. Baird informs us that Mr. R. Kennicott, whose oological explorations in Arctic America have before been noticed in the 'Ibis' (1860, p. 309; 1862, p. 307), is starting on another enterprise. "He has always wished to make a journey up the Pacific to Russian America, and is now about realizing the expectation under very favourable auspices. He goes out in March with a party of the surveyors of the line of the Russian-American Overland Telegraph Company, to San Francisco, and will thence proceed in a Government steamer direct to Norton Sound and the mouth of the Yukon, so as to arrive there about June. He will have a perfect outfit—six companions to aid in collecting—and bids fair to do an enormous business in zoology. He will take six dozen, or more, of egg-drills and pipes, from which you may judge of his 'intentions.' I hope he will happen on the breeding-ground of many rare birds."

We can only say that this adventurous traveller has our best wishes for his success and safe return.

Mr. Frederick Godman has lately left this country to pass a few months in the Azores, investigating their Natural History. Some peculiarities of the avifauna of these islands, the south-western outliers of the Palæarctic Region, have been noticed in a former volume of this Journal (Ibis, 1861, p. 400); and though, doubtless, the Azorean fauna is very limited with regard to species, we entirely concur in the remarks then made, as to the probability of its being found to be very interesting considered in its relation to the faunas of the neighbouring groups of islands and of the continent. Mr. Godman is accompanied by a collector, for whom we trust plenty of work may be found; but we believe our friend is well aware that it is often the *quality*, rather than the *quantity*, of the species collected that is valuable in the present state of science.

Though devoted to another branch of zoology, the writings of Mr. W. S. Macleay, the inventor of the 'Quinary System,' had so much influence on ornithology, that the death of this able naturalist, in Australia, on the 25th of January last, seems to require notice here. We may also mention that Sir Robert Schomburgk, a contributor to the 'Ibis,' and a man who did much to advance the study of Natural History, died at Berlin on the 11th of March.

THE IBIS.

NEW SERIES.

No. III. JULY 1865.

XXIII.—*On the Ornithology of Palestine.* Part II. By the Rev. H. B. Tristram, M.A., F.L.S., C.M.Z.S.

[Continued from page 83.]

In Palestine, as in every other country, tropical, temperate, or arctic, which has not been depopulated by the mania of game preserving or "la chasse" (the former gibbeting White Owls on barn-doors, the latter exposing Wagtails and Titmice as 'gibier'), the birds of prey form the prominent feature in the ornithological landscape. Over the deep valley of the Jordan Kestrels hover, Kites and Short-toed Eagles (*Circaetus gallicus*) soar throughout the year, Harriers and Buzzards perpetually sweep across the marshes and maritime plains; the traveller can never mount a hill without being watched by parties of Griffons and Eagles circling far above him. The Griffons are far more numerous than in any other country I have visited, while the larger species of Eagles are certainly not less abundant than in the best stocked wildernesses of Algeria or Tunis.

Forty-three species of raptorial birds rewarded our researches during our expedition last year, and probably there were few, unless rare stragglers, which escaped our notice; since our list comprises all the fifty-two birds named in Professor Blasius's 'List of the Birds of Europe,' except the strictly boreal and arctic forms *Falco gyrfalco*, *Haliæetus albicilla*, *Buteo lagopus*, five arctic and boreal Owls, *Haliæetus leucoryphus* (Pall.), and *Bubo maximus.* Of these the latter are the only two species which we can expect, by further research, to be added to the Palestine fauna. Besides the raptorial birds included either as residents or stragglers in European catalogues, we only obtained one species, the Fishing Owl, *Ketupa ceylonensis* (Gm.), an Indian and not an African type.

Unobservant as orientals proverbially are of the birds around them, and disposed to be decided "lumpers" in their nomenclature, yet the native vocabulary for the *Accipitres* is much richer than for any other class. The Arabs distinguish all the Vultures except the rare *Vultur monachus,* which they confound with the Griffon. They have five names for the Falcons, three for the Eagles, and two for the Kites. They recognize both the Kestrels, the Sparrow-Hawks, and have a distinct appellation for the Harriers: while they distinguish the *Bubo ascalaphus,* the White, Little, and Scops Owls.

Incidentally as natural history is mentioned in Holy Scripture, yet even there we have ten distinct Hebrew names for the raptorial birds, several of which are at once recognizable in the vernacular Arabic of the country. They are, first, פֶּרֶס, "*peres,*" *i. e.* 'the breaker,' translated in our version 'Ossifrage,' a name admirably adapted to express the remarkable and well-known habit of the Lämmergeyer of dropping its prey, whether mammals, serpents, but especially tortoises, from great heights to break their bones or shells. Although the name has been applied in modern scientific nomenclature to one of the Eagles, there can be no doubt but that the *Ossifraga* of the Latin authors and of the authorized version is to be identified with the Gypaete.

Secondly, we have נֶשֶׁר, "*nesher*" (Arabic نسر, "*niss'r*"), rendered 'Eagle' in our version; but unquestionably in the ancient Hebrew, as in the modern Arabic, the name of the Griffon-Vulture—the most majestic of birds in action and appearance, and the type of the Assyrian deity Nisroch. The expression "who enlargeth thy baldness as an eagle's" (*nesher*), evidently applies only to the Griffon. The Hebrew רָחָם, "*racham*" (Arabic رخمة, "*rakhma*") is translated 'Geir-eagle,' but is the universal and exclusive name of the Egyptian Vulture (*Neophron percnopterus*) throughout Africa and Western Asia.

The Hebrew עָזְנִיָּה, "*'azniyah,*" rendered 'Osprey' in our version, seems to be applied generally to all the larger Eagles, and especially to the commonest of them in Palestine, *Circaetus gallicus* (Gm.), all of which are included by the Arabs under the term عقاب, "*'okab,*" with distinctive epithets.

'Vulture' is, in the authorized version, a rendering for דַיָּה, "*dayah,*" a term which may be recognized at once in the modern Arabic هديه, "*h'dayah,*" 'the Kite' or 'Glede,' by which word it is translated in other passages. This name probably included also the Buzzard, distinguished in the modern vernacular as "*Shahîn.*"

All the smaller *Falconidæ* are comprised under the Hebrew name נֵץ, "*netz,*" but with the addition "after his kind," showing that the sacred writer was well aware of the numerous species included under this term.

The Owls are comprised in the Hebrew nomenclature under four names, יַנְשׁוּף, "*yanshuph*"; כּוֹס, "*cos*"; קִפּוֹז, "*kippoz*"; and לִילִית, "*lilith*"; translated 'Owl,' 'Great Owl,' 'Little Owl,' and 'Screech Owl.' None of these names seem to have glossarial representatives in the modern Arabic, though the different species are as clearly distinguished in one language as in the other; and it seems probable that the *Bubo ascalaphus, Syrnium aluco, Athene meridionalis,* and *Scops giu* are the four species especially distinguished by the Hebrews.

I fear I owe an apology for introducing this philological disquisition; but the subject is not without some bearing on the ornithology of the country, as illustrating the species most familiarly known, and therefore most abundant in Palestine 3500 years ago. In the intervening period there has probably been far less change in the avifauna than in the human population.

GYPAETUS BARBATUS (L.) heads the list of Palestine raptorials. I do not think that we accumulated any new facts respecting the economy of the Lämmergeyer, though our observations corroborated facts previously ascertained. Although looked upon as especially a mountain-bird, ranging from the Pyrenees and Western Atlas to the Himalayahs, and in all its habitats a constant resident, it would seem to be the conformation of the mountains rather than the temperature which attracts it, for it may be found at all times of the year in the tremendous gorges which flank the deep and sultry Jordan valley. Unlike the Vultures, it is always a solitary bird; neither gregarious, as *Gyps fulvus*, nor sociable, as *Neophron percnopterus.* Yet, though never consorting with its own species, it has no repugnance to the neighbourhood of others; and as on the Atlas, so in Palestine its breeding-places are generally in the same cliffs with the colonies of Griffons. It may occasionally be seen in all parts of Palestine. I first noticed it on the top of Gerizim, sailing up the vale of Shechem. During the month of January we occasionally descried it overhead at the edge of the deep gorges which open on to the Dead Sea; in February it passed over the desert plains of Beersheba; and in March we had the pleasure of starting a noble Gypaete from its feast, only a few yards from us, on the vast open plain which extends from the forests of Gilead to the Hauran. We only ascertained three breeding-places, in none of which were we successful in obtaining its eggs; the first in the ravine of the Jabbok under Mount Gilead, and the other in the Wady Hamam, or Pigeon ravine, and the Wady Leimun, both opening on the plain of Gennesaret. In both of these latter localities were colonies of hundreds of Griffons. Dr. Jerdon states that in India it lays its eggs in April and May; but we found it in the Atlas sitting in February, and in Palestine it had hatched its young in March. Those birds which we had an opportunity of examining more closely had the ochreous colour on the lower parts developed with remarkable intensity. I do not know a greater treat for the ornithologist than to watch a pair of Lämmergeyers, in the Wady Hamam in the early morning, commencing their matutinal exercise by sailing close to the ground down the ravine, beneath cliffs 2000 feet high, and then gently steering by their tails, without any apparent motion of the outspread wings, one after the other across the mouth of the gorge, and reconnoitering leisurely as they retraced their flight on the opposite side at a little higher elevation. Soon they would beat down the other side, and after working carefully the whole face of the cliffs, would gradually rise above the valley in circling flights till they were lost to our eyes in the aërial distance above.

Vultur monachus, L. The Cinereous Vulture is by no means common in Palestine; but a few appear to be scattered over the country, living generally in the neighbourhood of, but not exactly in company with, the Griffons, from which, on the wing, they are not easily distinguished, unless the two species be seen flying in company. When in repose it is easy to recognize this bird, even at some distance, by the dark brown of its plumage, which is very different from the tawny hue of its ally. During the winter we observed it once or twice in Central Palestine; but only once during our long sojourn near the Dead Sea, when a solitary bird of this species was put up near the top of a mountain behind Engedi. On the 27th of February Mr. Upcher, while walking with me from the plain of Gennesaret to Tiberias, shot a Bonelli's Eagle under the cliffs overhanging the Sea of Galilee. I saw a Vulture dash from a small cave just behind him at the report of the piece, but it wheeled round a corner before we had more than a glimpse of it. We were unable at the time to climb up and examine the cave, but returned in the afternoon, reinforced by Messrs. Shepherd and Bartlett, to lay siege to it. We easily mounted to a ledge about twelve feet under the cave, but no bird appeared. My companions, who had their guns, half suspected they were brought on a wild goose-chase, and maintained it was impossible any bird would have sat so close. While we were talking, a sudden rush, like the beating of the branches of a tree, was heard, and a huge dark object dashed close over our heads, at a distance of not more than six feet. Both their guns were fired at the instant, but in what direction it is difficult to say, as the bird did not even take the trouble to shake its wings for some time. In wheeling circles it continued to return, and swept as near to us as prudence permitted, while Mr. Shepherd climbed up to the cavern, and in a few seconds returned with one white egg, a little larger than the ordinary run of Griffons', but of exactly the same texture. It was rather soiled, and proved to be hard-set. The nest was scanty, consisting chiefly of large tufts of grass, with the roots, laid on the floor of the cave. Mr. Shepherd generously presented me with the first-fruits of our nesting-season. As we were descending, the bird again and again returned close over head, and at length looked into her home forlorn; after which she commenced a series of rapid gyrations, each circle wider as well as higher, until, after watching her for a quarter of an hour, we lost sight of her altogether. I have seen eggs stated to belong to this Vulture very much spotted and coloured with rufous, but not more so than those of the Griffon occasionally are; but the only other egg of the species I ever obtained in Africa was white like this, and perceptibly thicker than the Griffon's. This eyrie near Tiberias was by no means difficult of access, and was about two miles distant from the immense colony of Griffons in the Wady Hamam. No other Vultures bred near it, though there were several pairs of Eagles of different species, and a few months later some Neophrons. In this instance, unlike the Gypaete, the Cinereous Vulture preferred solitude to the security of the almost inaccessible cliffs of the ravines. We never afterwards, not even in the Lebanon, observed this noble bird.

GYPS FULVUS (Gm.)—Arab, *Niss'r.* The numbers of the Griffon-Vultures in every part of Palestine are amazing; and they are found at all seasons of the year. I do not think that I ever surveyed a landscape without its being enlivened by the circling of a party of Griffons. Many colonies of eyries came under our observation in the gorge of the Wady Kelt (the supposed Cherith), near Jericho; in the cliffs near Heshbon under Mount Nebo; in the ravine of the Jabbok; in a gorge near Amman, the ancient Rabbah: two large colonies inhabit wadys on the north and east sides of Mount Carmel, whence we procured several eggs; but the most populous of all were the "Griffonries" in the stupendous cliffs of the Wady Hamam, "the robbers' caves" to the south-west, and in the deep glen of the Wady Leimun at the north-west of the plain of Gennesaret. In either of these sublime gorges, the reverberating echoes of a single rifle would bring forth Griffons by the hundred from their recesses. I counted on one occasion a hundred and twenty thus roused, and then gave up the reckoning in despair. In one morning Messrs. Shepherd and Upcher brought down five birds with their rifles, in the Wady Hamam, all of which were skinned the next day by Mr. Bartlett—a piece of taxidermy we flattered ourselves not easily to be surpassed, at least in quantity.

Few ravines can surpass in grandeur these gorges, although they are wholly without the setting of mountain scenery. The Wady Hamam is celebrated in Jewish history as the stronghold of a powerful band of rebels and robbers, who for years set at defiance all the power of Herod and the Romans. On either side the cliffs rise to a perpendicular height of more than 1000 feet, perforated and honeycombed by a multitude of caverns, holes, and narrow passages, with broken galleries and arches almost suspended in mid air, with their basements worn away by the action of time on the soft limestone. Again and again the troops of Herod were defeated by these robbers, until, at length, parties of soldiers, armed with grappling-irons, were let down by chains in boxes. These succeeded in effecting a lodgment, and dragging out the defenders with their hooks, dashed them down the precipice. The caverns were again fortified at the commencement of the war with Titus; but from that day to this have remained the undisturbed home of the Griffons, which have appropriated galleries and chambers, whether outer or inner, to their domestic purposes, while even the neighbouring shepherds superstitiously shrink from investigating them. Travellers have ridden past these wondrous labyrinths with only a slight notice, and so probably might we, had we not discovered them to be tenanted so much to our mind. Alas! Herod's army had neglected to leave us their boxes and chains, and we had to recommence the siege on our own resources. Day after day, from the 13th of March, we devoted a week to the assault; and well were we rewarded, though even at that period many of the nests contained young. Our dragoman, Giacomo Georgio, a Greek islander, was, fortunately for us, the very best rock-climber I ever saw, and by his aid we collected about twenty eggs. In no nest did we ever find more than a single egg or young bird. A couple of mules laden with ropes were sent round to the crest, and directed by signals from below; the end of a cord weighted with a stone was flung down, by the aid of which Giacomo, who had already climbed half way up, scaled the cliffs and entered the upper caves, while the less adventurous of ourselves were content to explore the lower tiers of ruins—also tenanted by Griffons, Lanners, Kestrels, and *Bubo ascalaphus.* To some of the nests the explorers were let down by ropes from above, but wherever the cliff was interrupted by an accessible ledge, we found a rope swinging from above to be the most available auxiliary. Great was the amazement of the Bedouin shepherds at our proceedings. Heretofore we had been put down as hakeems and dervishes, wise men who knew all things and could cure everything. Henceforward there was a solemn nod of the head, and the Franghi were mere fools,—harmless, and therefore to be respected as all of weak intellect are in the East; but hopeless fools, who, in our desire to introduce the 'Niss'r' into western lands, could not wait till the young were hatched, but must needs seize the eggs, and—O acme of our folly!—thought to produce young from the eggs which we had voided of their contents! The familiar spirits of the dervishes might do much, but this was beyond their power!

The Griffons were in the habit of soaring high, and sweeping the horizon about daybreak; then in about two hours they would return, and either betake themselves to the work of incubation, or perch motionless in long rows on the most conspicuous ledges and points of the precipices until the evening. They would then take a little airy exercise before retiring to rest. Like all other carrion-feeders, the Griffon must have the power of enduring prolonged abstinence; for it was utterly impossible that the neighbourhood of Gennesaret could have afforded sustenance to the flocks, amounting to five hundred birds, on the lowest computation, which inhabited the valleys close to it; and yet, so far as we could observe, for many days the sitting birds and their mates never left the wadys for more than an hour or two. Each had its own perch, its reserved seat, and daily we noted Vultures in exactly the same spots and in exactly the same numbers as we had seen them before. Nor were the Griffons first in the field for what little carrion our immediate neighbourhood afforded. The wolves and jackals always came in for the lion's share of a feast whenever a horse or cow died, as frequently happened near our camp. On a subsequent occasion, on the north side of Hermon, we observed them teaching the Neophrons the same lesson of patience they had learnt here. A long row of Egyptian Vultures were sitting on some rocks, so intently watching a spot in a cornfield that they took no notice of our approach. Creeping cautiously near, we watched a score of Griffons busily engaged in turning over a dead horse, one side of which they had already reduced to a skeleton. Their united efforts had just effected this, when we showed ourselves, and they quickly retired. The inferior scavengers, who dreaded us much less than them, at once rushed down to the repast, and, utterly regardless of our presence within ten yards of them, began to gorge. We had hardly retired two hundred yards when the Griffons came down with a swoop, and the Neophrons hurriedly resumed their post of observation; while some Black Kites remained, and continued to filch a few morsels by their superior agility from their lordly superiors.

NEOPHRON PERCNOPTERUS (L.). One often regrets that we have but the one generic word 'Vulture' in our language to comprehend the noble Griffon, and that very useful but very despicable scavenger 'Pharaoh's hen,' as Europeans term the '*rakhma*.' Really, the Barn-Owl as little suggests the idea of a Peregrine, as does the Neophron that of the Griffon. Yet it is a handsome bird on the wing, and the distribution of the black and white in its plumage has a fine effect as it circles over head, or sweeps past the traveller down some deep ravine. Although often seen under the Griffons, it appears to have about the same sort of acquaintance with it that the crossing-sweeper had with George IV., and most deferentially makes way for the lordly monarch. It never breeds in colonies, and seldom are two nests to be found very near together; but it is the most universally diffused of all the Raptors of Palestine during summer, it being impossible in any part of the country to travel a mile or two without putting up a pair. It has no dislike to the neighbourhood of man, and fearlessly resorts to the dung-hills of the villages to feed. No filth, vegetable or animal, seems to come amiss to it; and I once surprised a pair in the act of gorging at a heap of spoilt figs. The Neophron is strictly migratory, and begins to return about the end of March, and by the middle of April the country is full of them. The first egg we obtained was laid near the plain of Gennesaret on April 1st, and our last pair of *fresh* eggs were found on May 24th, in the mountainous region near Hermon. The nests, though always in the cliffs, were generally low down, and comparatively easy of access, in this respect differing very decidedly from the Griffons. I took an egg from one nest in an arched passage through the rocks, close to the village of Mejdel, and so little concealed that every passer-by could see it, and a child might have climbed up to it. On the whole, it appears to be more prolific in Palestine than in North Africa; for while in the Atlas a single egg was the frequent complement, out of upwards of fifty nests which we took in this expedition I do not remember one in which the bird was actually sitting on a solitary egg. Yet in no instance did we find more than a pair of eggs. As is observed in the case of the Golden Eagle, the eggs are rarely alike, one being invariably much more richly coloured than the other, though before the process of incubation has been long continued, both become alike sodden and discoloured by filth. There is a rich variety in the colouring of the fresh eggs, from a deep russet-red, uniformly diffused over the whole surface, to a paler red, like the Peregrine's. Sometimes they are mottled and blotched like the Honey-Buzzard's or the Sparrow-Hawk's; at others spotted as faintly as the Kites', and even almost a pure white. There is no green tissue inside. The nest is an enormous congeries of sticks, clods of turf, bullocks' ribs, pieces of sheepskin, old rags, and whatever else the neighbourhood of a village or camp may afford, and is generally somewhat depressed in the centre. Frequently solitary birds were noticed in April in the dark immature plumage, proving that the white plumage is not attained till the third year. The Neophron is more plentiful in Gilead and Moab than elsewhere; at least we obtained more nests in those regions, to which the birds seem to be attracted by the enormous flocks and herds of the Bedouin, on the ordure of which they largely feed.

Aquila chrysaetus (L.). The Golden Eagle was very common all the winter in the maritime plains and about Mount Carmel, as well as in the south of Judæa; but though nowhere altogether absent in spring, it became very much more scarce, and probably retires to the Lebanon and Anti-Lebanon to breed. We saw several pairs during January in the neighbourhood of the Dead Sea, but never took the nest in Palestine; nor had we any opportunity of observing its nidification. It did not occur so frequently as the succeeding species when the season advanced.

Aquila heliaca (Sav.). This truly imperial bird is more abundant in Palestine than in any country which I have visited. It may be said (in summer at least), in great measure, to replace the Golden Eagle of Europe. There is a beauty and majesty in its movements, and in its greater fearlessness of man when in search of food, which at once attracts one; while the very distinct white scapulars and the light head show conspicuously on the wing. On one occasion I observed an Imperial Eagle continue to hover over a gazelle which we had wounded, but which, being in a hostile and unknown country in Gilead, we were unable to follow, and doubtless it succeeded in making a hearty meal of our quarry. At another time, in the early morning, while riding through the Valley of Dothan, one of these birds, with its white shoulders beautifully distinct, passed slowly close overhead, and escaped before we had time to take down our pieces. Unlike the Golden Eagle, it was as common at one time of the year as another, though we never took a nest. At Beyrout I had a skin given me of an immature bird in that plumage (with two white bands on the wings) in which it has been described as *Aquila bifasciata*. This bird had been brought to one of the American Missionaries on the Lebanon by two Druse boys, who begged permission, after the skin had been taken off, to feast on the flesh, which they did with a hearty relish.

Aquila nævia (Gm.). Much more common in winter than in summer on the plains. We observed it only two or three times in the Lebanon in spring. Mr. Gurney has pronounced a specimen I showed to him to belong to the large form described by Pallas as *Aquila clanga.* I found one nest in a tree, between Nazareth and Caiffa.

Aquila nævioides (Cuv.). The Tawny Eagle is much more common throughout the year than *A. nævia,* and is much bolder and more familiar in its habits. It almost deserves the name of the parasitic Eagle, from the unscrupulous way in which it pursues and robs lesser birds of prey of their booty. It is more abundant in the maritime plains and in the inhabited central country than in the east or south. One nest only rewarded our search. This was in April, on the north side of Mount Carmel. We frequently noticed the Tawny Eagle in the neighbourhood of Damascus and in Cœle-Syria, to which region many of the species seem to retire for nidification in the spring. A young nestling was brought to me in April at Jericho, and another at Jerusalem a fortnight later.

Aquila pennata (Gm.). This elegant little Eagle is by no means common, and is confined, so far as our observation goes, to the northern part of the country. We observed it in November near Beyrout, and saw it frequently in the hill country beyond Sidon and Tyre during the following months. Mr. Upcher shot one in the Lebanon in March, but we never obtained its nest. It perches on trees rather than rocks.

Aquila bonellii (Temm.). Bonelli's Eagle is rather common in every part of the country; but seems to avoid the plains, being much attached to the wadys and rocky terraces with which the country abounds. It perches on some conspicuous point of rock looking out for its prey, and after a short circling excursion will again and again return to the same post of observation. I take it to be more truly a game-killing Raptor than any of the preceding Eagles, and less addicted to carrion-feeding than any of its congeners. The Rock-Pigeons are its favourite quarry in winter, and it preys much on the Turtle-Doves in the Ghor and the plain of Gennesaret. I have also seen it pursue Kites, apparently with the intent of robbing them. Most of the birds we saw were in the adult plumage, but in early spring we noted several with the ruddy breast of the second year's plumage, which evidently had not paired. It frequents the gardens behind

Sidon and Jaffa; but is more generally found in the wooded hill-regions about Carmel, Tabor, and the Lake of Galilee, from which places we procured the eggs in April, as well as two nests of one egg each in the neighbourhood of Gerasch, east of the mountains of Gilead. It does not appear to lay till the end of March, and then generally a single egg. These are either white, or with the faintest russet spots. One nest, which contained two eggs both fairly coloured, baffled all our attempts at its capture. It was comfortably placed under an overhanging piece of rock near the top of the cliffs of Wady Hamam, in such a position that no rope could be thrown over to let down an adventurous climber; and yet from another point, which projected nearly parallel to it, we could look into the nest with longing eyes. The old birds seemed perfectly aware of the impregnability of their fortress.

Pandion haliæetus (L.). We never paid a visit, either in winter or spring, to the neighbourhood of Carmel and the Kishon without seeing the Osprey. There are some lagoons near the mouth of the Kishon admirably adapted for this bird; and there it could at any time be seen perched on some naked stump projecting from the water, or frequently on the coast on the extremity of the skeleton-rib of some stranded wreck. The marshes of the Zerka (Crocodile River) are also stated to be a favourite resort. We saw the Osprey as late as April, but did not discover its nest. In spite of the amazing abundance of fish in the Lake of Galilee, we never noticed this bird there, probably because of the absence of suitable cover. It has been shot at Beyrout.

Circaetus gallicus (Gm.). Beyond all doubt the most abundant of all the Eagle-tribe in Palestine, from the early spring. In winter it seems to be more scarce, and is probably partially migratory. I observed it in December among the gardens and orange-groves of Sidon; but did not satisfactorily identify it again till the beginning of March, from which time it overspread the whole country. Being strictly a reptile-feeder, it probably withdraws to the Arabian districts for the two or three months during which the lizards and snakes hybernate. In the coast-plains there were abundance of frogs to be found at all seasons, and the Short-toed Eagle is therefore more accurately described as a wanderer than as a true migrant. It prefers the neighbourhood of woods near the cultivated plains to the truly forest districts. In its breeding-habits it varies, choosing generally some low ledge in a wady, but sometimes also building a great platform of sticks in the top of a large oak or terebinth. The first egg we took was in a wady on Carmel, on March 23rd, quite fresh ; the second in a wady near Heshbon, east of the Dead Sea, on April 30th, equally fresh ; after which we obtained several others, not yet incubated, so late as to the 10th of May. One egg we took was prettily spotted, all the others were white. On one occasion the sitting bird we shot from the nest was ascertained by dissection to be a male. In Africa I have found two eggs in the nest, but in Palestine we never found more than one. The same rule seems to hold throughout all the Raptors—that wherever the species is abundant, the number of young is proportionally fewer than when the individuals are scarce. The *Circaetus* is a fearless bird, and more easily approached than any other of the large Raptors, sitting composedly on a conspicuous point of rock, or on the top of an isolated tree, till the sportsman is almost within gunshot. I do not know a more magnificent-looking bird, as it sits with its great flat head bent down on its shoulders, its huge yellow eyes glaring around, and the bright spotting of its breast and abdomen as distinct as that of a Missel-Thrush. It is very noisy, and always betrays the neighbourhood of its nest by the loud harsh scream with which the male and female vociferously pursue each other, rising into the air and making short circling flights, after which they suddenly drop down, one to the nest, the other to a post of observation hard by. They will often dash down to the fields below, sweep for a few minutes like a Harrier, and then seizing one of the great black ground-snakes or a *Tropidonotus* in a ditch, sit down and occupy some minutes in killing the reptile, after which they carry their prize away in their claws, not, like many other Eagles, devouring it on the spot.

BUTEO VULGARIS, Bechst. The Common Buzzard was very plentiful in the plains of Phœnicia and Acre during winter, resorting to the gardens and orchards, or perching on trees in the open plains. It is also common at that season in the Lebanon. We shot one in December close to Mount Carmel, the most southerly point at which we observed it; but it never afterwards came under our notice.

Buteo ferox (S. Gmel.); *B. rufinus,* Rüpp. This magnificent and aquiline Buzzard is extremely numerous in every part of the country, and at all times of the year. It congregates in small flocks in the orangeries and olive-yards behind the Phœnician towns, consorting with *Circaetus gallicus,* and is equally abundant in the wildest recesses of the eastern mountains, or on the bare and boundless plains of the southern wilderness. In the south of Judæa in winter it is decidedly gregarious, but during the breeding-season is segregated in pairs in the wooded wadys. We found the nests both on trees and in rocks, generally in the latter. The complement of eggs is two or three, generally the latter. The first nest we took was on Mount Carmel, on a rocky ledge easy of access, on March 22nd, and which contained three eggs, quite fresh and beautifully marked; the last fresh eggs we found were a pair near Mount Tabor, on May 1st. The eggs are of course larger than, but no way differently coloured from, those of the Common Buzzard. The nest is large, but more neatly made than those of the Eagles, and well lined with woollen rags and the soft withered leaves of bullrushes and flags, and plastered with mud. The plumage of the Palestine specimens is very rufous, and we shot breeding birds both with and without the bars on the tail. I do not think it is a carrion-feeder; but it preys upon lizards and serpents, as well as on small quadrupeds. We seldom found traces of feathered game in its maw. It is called by the Arabs "Shahîn."

Pernis apivorus (L.). Rather scarce, and only occasionally noticed by us, but undoubtedly a constant resident. We observed it in November and December near the coast, and saw it in a collection in Beyrout, where it had been shot in autumn. Mr. Bartlett shot a specimen near Nazareth in April.

Milvus ictinus, Sav. During winter this is the only Kite to be seen, and very common it is; but towards spring it becomes more scarce, the larger number retiring to the northern mountains for nidification, though a few still remain in the central districts near Carmel and Nablous, and many in the hill country of Galilee. Yet we only took two well-identified nests. In winter the Kite is gregarious, especially in the south; and is very abundant in the wilderness to the west of the Dead Sea, and in the whole desert and plateaux round Beersheba, where large flocks may be seen hovering at all times of the day, and hanging about the neighbourhood of the Bedouin camps and their cattle. In wet and stormy weather they will gather like Rooks, and sit motionless on a wall or on a clump of trees, in the ruined district of Hebron, for hours together.

Milvus migrans (Bodd.); *Falco ater*, Gm. No sooner has the Red Kite begun to retire northwards than the Black Kite, never once seen in winter, returns in immense numbers from the south and, about the beginning of March, scatters itself over the whole country, preferring especially the neighbourhood of villages, where it is a welcome and unmolested guest, and certainly does not appear to attack the poultry, among which it may often be seen feeding on garbage. It is not strictly gregarious, though very sociable; and the slaughter of a sheep near the tents will soon attract a large party of Kites, which swoop down, regardless of man and guns, and enjoy a noisy scramble for the refuse, chasing each other in a laughable fashion, and sometimes enabling the wily Raven to steal off with the coveted morsel during their contention. It is the butt of all the smaller scavengers, and it is evidently most unpopular with the Crows and Daws, and even with the Rollers, who enjoy the amusement of teasing it in their tumbling flight, which is a manœuvre most perplexing to the Kite. The nest, generally in a tree, often in a glen, is a grotesque, untidy structure, decorated with all sorts of rags and rubbish, apparently to attract observation. The eggs are invariably two, and, as a rule, are more richly coloured than those of the *Milvus ictinus*.

Milvus ægyptius (Gm.); *M. parasiticus*, Daud. This bird possesses the same habits as the preceding, but is not so abundant.

Perhaps it is rather less familiar, and we found its nests generally in the retired wadys. Neither of these Kites breed until some time after their return; and we took two eggs near the sources of the Jordan in a cliff the last week of May. One nest had three eggs, which were all remarkably small, and with scarcely any colouring except dirt.

Elanus cæruleus (Desf.); *Falco melanopterus,* Daud. Another summer visitant, but very scarce and shy. It was observed once or twice in thickets near the Jordan, and once in the north near Shef Amar.

Falco peregrinus, L. It is very interesting to observe the clearly defined geographical ranges of the different Falcons in Palestine, which they would appear never to transgress. The Peregrine, nowhere numerous, occurs at all times of the year in all suitable localities near the coast, and on the western slopes of the watershed of Central Palestine. To the eastward of the crest we never observed it. It extends from the Lebanon to the south of Jordan. During the winter we frequently met with it as far inland as Nazareth; and in the beginning of March I shot a female from a palm-tree in a garden at Jaffa, where it was evidently, from the state of its lower plumage, incubating. The same restriction of the Peregrine to the coastline I have observed in North Africa; but there it is replaced inland by the *Falco barbarus;* in Syria by the following species:—

Falco lanarius, Linn. By far the most common of the large Falcons, and universally distributed throughout the rocky wadys on both sides of the Jordan and the Dead Sea, and as far north as the foot of Hermon. It is a permanent resident, and, as we were told, reoccupies the same eyrie year after year. A nest of four eggs was taken in the gorge of the Wady Kelt, near Jericho, on February 29th; and the Lanner was breeding in four or five places in the Wady Hamam and Wady Leimun, near Gennesaret, in April. No region is too desolate or dreary for this noble bird. On the stupendous rock of Masada, facing the Dead Sea, a Lanner dropped a Pochard-Duck on being fired at; and we also saw a pair at Jebel Usdum, the salt mountain at the south end of the lake. It seems to avoid the forests; for though very common near the mouths of the ravines east of Jordan, we never observed it in the vast forests of Gilead and Ajlun. It is in high repute among the Bedouins for the chase, and trained birds are as valuable as in North Africa. But though we frequently saw it in the possession of Arab Sheikhs of high degree, we never had an opportunity of witnessing the sport, as we only met them on the march.

Falco sacer, Gmel. This splendid Falcon only came once under my observation in the oak forests of Bashan, where I was close to it, as it perched in a tree overhead. I did not add it to our trophies, having only two charges of dust-shot in my gun, for which, of course, it cared but little. It seems to prefer the wide plains and deserts to the cliffs of the Jordan valley. The Sheikhs of the Beni Sakk'r (sons of the Falcon) make it a point of distinction to possess several of these birds trained for the chase of the gazelle, and the distinction between it and the Lanner is well known to all the Arabs. None of them seem to be aware of or to recognize the Peregrine of the coast.

Falco eleonoræ, Gené. This bird was several times seen by us in spring, but not in winter; and a pair were found breeding in the Bukáa, near the village of Zebdany, in the beginning of June. Here, as in Algeria, it seems to be the very latest of all Raptors in its nidification.

Hypotriorchis subbuteo (L.). Another summer visitor, and rather late in its return; confined, so far as we observed, to the wooded districts, and resorting to the olive-yards and open glades.

Hypotriorchis æsalon (L.). Not at all uncommon, but very solitary during the winter season. We often saw it on the coast and in the central plains. The last seen was shot in Bashan on the 11th of March.

Erythropus vespertinus (L.). This pretty little Hobby is a summer migrant, but returns earlier than the common species. The absence of suitable woods is probably the reason of its being a scarce bird, and confined to the central districts.

TINNUNCULUS ALAUDARIUS, G. R. Gray. The Kestrel is excessively common in every part of the country throughout the year, up to the confines of the southern desert. In the Ghor and in the eastern forests, among the ruins of Amman and Gerash, in the desolate gorges of the Dead Sea, among the luxuriant gardens of the coast, and in the sacred recesses of the mosques of Omar and Hebron it equally abounds. It is generally gregarious, ten or twenty pairs breeding in the same ruins, and rearing their young about the end of March. It often builds its nest in the recesses of the caves which are occupied by the Griffons; and is the only bird which the Eagles appear to permit to live in close proximity to them. At Amman, too, it builds in the ruins in company with the Jackdaws; and in several places, as at Lydda and Nazareth, large colonies are mixed indiscriminately with those of the following species. The number of nests we came across without searching for them was enormous.

TINNUNCULUS CENCHRIS (Frisch). Returns with the Swallows in March, and at once consorts with its congener, the common Kestrel. It may be seen everywhere, in the open glades, or among the lanes between the gardens in the suburbs of the villages pursuing insects, and especially catching cockchafers towards evening. It breeds, so far as we have observed, invariably in communities, usually in narrow fissures of the rocks or in the crevices of ruins, not generally in very inaccessible situations, but always in so narrow a cleft, and at such a depth in, that the eggs are hard to extract. I never found a colony without many of the common Kestrel breeding in the same place. The largest rookeries of this bird we met with were in the towns of Lydda and Ramleh, and in the top of an old quarried cave (perfectly protected by prickly fern) in the town of Nazareth. Although the two species are so closely allied, there can be no difficulty in discriminating the eggs; and we found that the Arab boys knew the difference between the two species at once, calling one the black-nailed, and the other the white-nailed "*bashîk.*"

ASTUR PALUMBARIUS (L.). The Gos-Hawk cannot be looked on as a bird of Palestine south of the wooded district of Lebanon. We never met with it; but Signor Fidas, a zealous Italian collector at Beyrout, showed me the skin of one he had purchased in the flesh in the market of Beyrout.

Accipiter nisus (L.). Very common about olive-yards and clumps of wood in winter in the south, especially between Jerusalem and Jaffa. It also resorts to the oases and shrubby spots near the Dead Sea; and is plentiful about the Sea of Galilee, the town of Nablous, and wherever small birds, especially the Marsh-Sparrow (*Passer salicarius*), are found. It disappears in April, but still remains in the high grounds of Lebanon and the Anti-Lebanon.

Accipiter brevipes (Severzow). I cannot say whether this pretty little Sparrow-Hawk is a migrant; but we certainly never obtained it until April. Still it may have often escaped our notice, and been taken for the common Sparrow-Hawk in winter, especially near Jericho. The few we identified or shot seemed more stealthy in their movements than their congeners; flying up water-courses under the bushes, betaking themselves to thickets, and remaining under cover of the brushwood.

Circus æruginosus (L.). The Marsh-Harrier is very common throughout the year on all the open ground, and far more abundant than any of the other Harriers. We obtained it in every variety of plumage. One in my collection, a male, shot in March, has the shoulders and tail a silvery grey, and the primaries black, as if it were making an effort to assume the pallid plumage of the males of the other species.

Circus cyaneus (L.). This is also a common bird on the plains, and a permanent resident.

Circus cineraceus (Montagu). Twice obtained by us near Tiberias and on the Plain of Gennesaret in spring. Though we did not shoot it in winter, we have no other grounds for supposing it to be migratory.

Circus swainsoni, Smith; *C. pallidus*, Sykes. I think this bird is more common than either of the preceding species, as several specimens were shot by different members of our society at different seasons. It is always to be found about the swamps of Esdraelon, and especially by the lagoons at the mouth of the Kishon.

ATHENE PERSICA (Vieill.); *A. meridionalis,* Risso. The "*Boomeh*" is one of the commonest and most universally distributed birds in every part of the Holy Land. In the olive-yards round the villages, in the rocks of the wadys, in the thickets by the water-side, in the tombs or on the ruins, among the desolate heaps which mark the sites of ancient Judah, on the sandy mounds of Beersheba, or on the spray-beaten fragments of Tyre, his low wailing note is sure to be heard at sunset, and himself seen bowing and keeping time to his own music. The Little Owl is a great favourite; he is lucky, and there is a strong prejudice against injuring him, which may partly account for his exceptional numbers. It breeds early, but as I have had nestlings brought to me in May, it is possible it sometimes rears a second family. When disturbed, it disappears with magical celerity into a hollow tree, or a hole in the ground, or the rocks, as the case may be.

KETUPA CEYLONENSIS (Gm.). We can only point to one locality as the certain residence of this bird in Palestine. It is perhaps the most interesting addition, as well as the most unexpected, which we made to the fauna of the country; and was found by us in the wild wooded glen of Wady el Kurn, running up from the Plain of Acre. We discovered it accidentally, and at first took it for the *Bubo ascalaphus,* when it bolted out of the dense foliage of a great Carob-tree under which we were standing; we thus put up no less than four individuals in two days. When disturbed, the bird was more than ordinarily perplexed, even for an Owl; but owing to the difficulty of crossing the gully and the dense jungle we were only able to secure a single specimen which had been put up from a Carob-tree by Mr. Bartlett, and was marked by me on to a ledge of rocks on the opposite side of the wady. The wady possesses a perennial stream, well shaded by evergreen timber, and swarming with fish and crabs, the favourite and probably exclusive food of the *Ketupa.* I obtained my specimen on December 8th.

SCOPS GIU (Scop.). Very common in spring in old ruins and olive-groves, returning to Palestine about the middle of April. We found the nests both in the walls of ruins and in hollow trees. No less than four birds were caught on their eggs in holes of olive-trees. It does not come out so soon as the *Athene persica,* indeed is seldom heard till after sunset. All my specimens are a little larger and decidedly paler in hue than those from the south of Europe. In this respect it appears to approach the Indian *S. pennata*; but I have not a specimen by me for comparison.

Bubo ascalaphus, Sav. This is the most common Owl of Palestine next to *Athene persica,* and, like it, adapts itself to the ever varying physical geography of the country. In the rolling uplands of Beersheba it resorts to burrows in the ground; at Rabbath Ammon it has its home among the ruins; in the ravines of Galilee and the Ghor it retires in security to the most inaccessible caverns. Mr. Upcher shot one which dashed out of a cave as we were climbing for Griffons' nests in the Wady Hamam, and with the other barrel brought down a Woodcock which rose from another cave at the same time. We had two eggs brought to us near the Jabbok, which could only have belonged to this bird. In the uplands of Beersheba it is very common, and I frequently have put it up at noon day. It invariably disappeared into some burrow after a short flight.

Asio otus (L.). Not often found, and then only in the wooded districts and highlands.

Asio brachyotus (L.). A winter visitant only; but at that season equally distributed in the north and on the bare downs of the south.

Syrnium aluco (L.). Very common where there is large timber, but nowhere else. When camping in the forest country of Gilead in April, we heard its hoot night after night, and took one nest in a tree containing three hard-set eggs. In the collection of the late Mr. Herschell there was a specimen shot by that gentleman at Jericho, certainly an exceptional locality; and when at the Cedars of Lebanon, we found it very numerous, roosting in twos and threes in the highest tops of the patriarchs of the grove. The plumage is very much more grey than in any European specimens I have seen, but not more so than in some from the Atlas.

Strix flammea, L. I met with the White Owl during my first visit; but we did not add it to our list on this expedition. There can be no doubt, however, of its being by no means uncommon, as it is well known to the Arabs of Jericho, and also near the Lake of Galilee, under the name of '*Boomeh abiad,*' "White Owl."

N.B. In my article "On the Birds of Palestine" (Ibis, 1859, p. 26), I mentioned *Micronisus gabar* as observed, but not obtained. This should probably be cancelled, as we never met with it during this expedition.

The list I have given is quite sufficient to show how strictly the Raptorial fauna of Palestine is, as I remarked at the outset, of the Mediterranean type, and how very few of the Indian species have succeeded in planting themselves far to the westward. Enough, however, has been found to show that we are here beginning to impinge on the Indian region.

[To be continued.]

XXIV.—*A Seventh additional List of Birds from Natal.*

By J. H. Gurney, M.P., F.Z.S.

In the Former Series of the 'Ibis' I have enumerated two hundred and forty-eight species of birds collected in the Colony of Natal, and, with very few exceptions, sent to me from thence by my indefatigable correspondent, Mr. Thomas Ayres.

I have now the pleasure of continuing this list by the addition of thirty-five species not previously enumerated.

Of these the following, viz. Nos. 252, 253, 274, and 279, were obtained beyond the north-eastern boundary of the colony, at the mouth of the Monocusi River. I have, however, thought this locality to be sufficiently within the range of the Natal district to justify me in including these species in the present list.

As on former occasions, I have appended to each species the note which Mr. Ayres has sent me with it; and in the case of some species I have also introduced a few remarks of my own, which are distinguished from those of Mr. Ayres by brackets and my own initials.

249. Cypselus cafer, Licht. White-Rumped Swift.

Male. Iris dusky; bill black; toes dusky.

I have not seen these Swifts on the coast, neither have I seen them inland during the winter months; but numbers were flying about Maritzburg in December, and I should have collected more had I not been prevented by illness from moving at all; their flight is not nearly so rapid as that of the Black Swift; the two species were flying in numbers together, so I had a fair opportunity of noticing both.

[The "Black Swift" referred to in the above paragraph, is the species referred to by me in the 'Ibis' (1863, p. 321) as identical with *Cypselus apus*. I have subsequently entertained doubts as to this identity, and I await further examples to enable me to compare a larger number of specimens from Natal with those obtained in England.—J. H. G.]

250. Cotyle fuligula, Licht. Brown Martin.

Male. Iris dark brown; bill black; tarsi and feet brown.

These Martins are found here all through the year, but are not much seen during the summer months, as they then retire amongst the precipices to breed, dispersing themselves all over the country in the winter; their flight is comparatively heavy and slow; they are seldom seen in numbers.

251. Hirundo albigula, Bp. White-throated Swallow.

Male and *Female.* Iris dusky; bill black; tarsi and feet dusky.

These pretty Swallows are not nearly so common as the Summer-Swallow (*H. rustica*); they appear to arrive at the same time as the latter bird, and to leave with them, and the two species are frequently seen hunting in company; their flight is, however, I think, more rapid. The tawny appearance of the breasts of the specimens sent is, I believe, merely caused by their having constantly perched on a horizontal iron bar which supported the chimney of a house, and was passed through the roof.

252. Melittophagus bullockoides, Smith. Greater South African Bee-eater.

From the Monocusi River. Iris, bill, tarsi, and feet black.

253. Halcyon senegalensis, Linn. Senegal Kingfisher.

These birds were collected to the north-east of Natal, at the mouth of the Monocusi River. The irides of this *Halcyon* are dusky; the tarsi and feet black. In the bill the upper mandible is red, and the lower black.

254. Halcyon senegaloides, Smith. Mangrove-Kingfisher.

Male. Iris dark brown; bill deep red; tarsi and feet dark reddish yellow.

In the *Female* the bill is dusky towards the tip, and the plumage duller.

These birds, as far as I know, are only found among the mangroves which line the bay; they feed principally upon small crabs, though fish are sometimes taken by them. They are generally found singly or in pairs, and are only here during the winter months, leaving us on the approach of summer; they are rather shy birds, and dive into the dense mangrove-bush when alarmed.

255. Upupa minor, Shaw.

Male and *Female.* Iris dusky brown; bill dusky, pale at the base; tarsi and feet dusky brown. The female is smaller than the male.

These birds are very scarce in Natal; when found they are generally solitary, only very occasionally a pair are together. I know little or nothing of their habits from personal observation; they often feed on the ground, and are very shy generally.

256. Sylvietta micrura, Rüpp. Short-tailed Creeper.

Female. Shot by Mr. Norris whilst it was creeping about in some dense underwood. Very uncommon here.

[The collections formed in Damara Land by Mr. Andersson contained several examples of this curious species.—J. H. G.]

257. Apalis thoracica (Shaw). Bar-throated Warbler.

Male and *Female*. The irides are of a very pale greenish yellow; the bill is black, ashy towards the tip; the tarsi and feet pale.

These birds are generally seen in the thick bush, creeping about the stems and boughs of trees and shrubs in search of small insects on which they live; they are generally solitary, or in pairs, and very silent; their flight is weak. They build a very delicate nest; it is hung to a few fine twigs, in rather a horizontal position; the outer layer is composed of mosses, lichens, cobwebs, and very fine pieces of grass, lined with thistle-down; the nest is deep and open at the top, and is somewhat the shape of those built by some of the Sun-birds; the eggs are elliptical in form, bluish-white, spotted pretty equally with brownish red, some of the spots being fainter than others.

258. Calamoherpe arundinacea (Gmel.)? Lesser Reed-Warbler.

Male. Iris light brown; bill, upper mandible dusky, the under yellowish pale; tarsi and feet yellowish ash-colour.

These birds frequent the sedgy pools and streams inland; they appear to be tolerably numerous; their habits are active, their notes loud and not unmusical. The specimen sent I shot in December; I did not notice any last winter (July) when I was shooting in the same locality, but still I think they must have been somewhere in the neighbourhood.

[Dr. Hartlaub considers the specimen sent to be specifically identical with *C. arundinacea*, though he remarks that the wings are "rather shorter, and the tail rather more rounded." When additional specimens have been obtained from Natal, the examination of such specimens will show whether the shorter primaries which characterize the present specimen form a constant character; should such prove the case, I should certainly consider the Natal bird to be a distinct species.—J. H. G.]

259. Camaroptera olivacea, Sundev. Olivaceous Camaroptera.

Two of the specimens sent are uncertain as to sex, the third is a female. The irides are light reddish brown; the bill is black; the tarsi and feet pale, darker on the outer sides.

The Caffres call this bird "Imboos Ischlaty" (signifying "bush-goat"), from its curious notes when it sees an object of suspicion or dislike, which much resemble the bleating of a kid at a distance, although the tiny bird may be within a few feet of the listener, hopping and creeping about the dense underwood, and peering through the crevices at its supposed enemy; the tail is then carried erect, like that of the English Wren, and the bird in almost constant motion; it has also a loud and oft-repeated "chucking" note, which it uses as a call to its mate during the breeding months. Its food consists entirely of small insects.

260. PHYLLOPNEUSTE TROCHILUS (Linn.). British Willow Warbler.

Female. This was also killed by Mr. Norris; it was perched on the top of a high tree.

[This species has also been obtained by Mr. Andersson in Damara Land.—J. H. G.]

261. ZOSTEROPS CAPENSIS, Sundev. Cape Zosterops.

Male.

[Mr. Ayres does not make any remark as to the habits of this species.—J. H. G.]

262. MUSCICAPA ADUSTA, Bp. Cinereous Flycatcher.

Male and *Female.* The irides are very dark hazel; the bill black; tarsi and feet dusky.

The sexes of these Flycatchers are very similar in size and plumage. They are solitary in their habits, and fond of stationing themselves on the bough of some tree, from thence darting upon the small insects which fly around them. They also feed upon seeds and berries in an equal degree; and this cannot possibly be for want of more congenial food, for insects of all kinds abound throughout the year in Natal, although far more numerous in the hot months.

263. BUTALIS CÆRULESCENS, Hartl., sp. nov. Ashy Flycatcher.

Male and *Female.* Irides very dark brown; the upper mandible of the bill is black, the under mandible ash-colour; tarsi and feet dusky.

The sexes are similar in plumage. In habits they much resemble *Parus niger*. I have at present only seen one family of them, seven or eight in number, two of which I shot; they were actively hunting about some low bushes, evidently in search of insects.

[Dr. Hartlaub informs me that this is a species hitherto undescribed. He has named it as above, and has favoured me with the following diagnosis of it:—

"Totus cinereo-cærulescens, subtus multo pallidior, gula conspicue albida; cauda nigricante; remigibus nigricantibus dorsi colore graciliter marginatis, intus margine albicantibus; subocularibus albis; pedibus et rostro nigris; mandibula dimidio basali pallida.

"Long. 5″; rostr. a fr. 4‴; al. 2″ 9‴; caud. 2″ 5‴; tars. 8‴."—J. H. G.]

264. Melænornis ater, Sundev. Black Flycatcher.

Female. Iris very dark brown; bill, tarsi, and feet black.

This bird evidently (by the appearance of the skin on the breast) had a nest somewhere in the neighbourhood, though I was unable to discover it, being far from home, and with the evening approaching. In appearance, when perched on the tree, it much resembles the Black Caterpillar-catcher (*Campephaga nigra*).

265. Enneoctonus collurio (Linn.). Red-backed Shrike.

This bird in habits and movements much resembles *Lanius collaris*; it is solitary and generally perched on some low bush; it frequently flies to the ground to pick up an insect, but I do not think it impales its prey; it is tolerably abundant the whole year round.

The irides are dark hazel; the bill ash-colour, light at the base, and nearly black at the tip; tarsi and feet dusky.

[The example sent (a male) appears identical with British specimens.—J. H. G.]

266. Oriolus galbula, Linn. Golden Oriole.

This was shot and skinned by Mr. Norris, a friend of mine. I have never yet met with one; it is extremely scarce here.

[I am indebted to Dr. Hartlaub for the identification of this specimen, an immature male.—J. H. G.]

267. EUPLECTES SUNDEVALLI, Bp. Sundevall's Bishop-bird.

These beautiful birds are not at all common in Natal; they are generally found in small families; they frequent the reedy banks of some of the rivers on the coast, and often attack the crops of oats in the ear; the bright plumage is only assumed during the summer months. Of their habits I know little or nothing.

268. EUPLECTES CAPENSIS (Linn.). Yellow-backed Bishop-bird.

Male in winter plumage. Irides dusky; bill pale dusky; tarsi and feet light brown.

These birds frequent more particularly the hills fifteen or twenty miles inland. In summer the males have a good deal of glossy black about them. They are found in small families in the open fields, and feed principally on grass seeds.

269. BUSERINUS SULPHURATUS (Linn.). Sulphureous Finch.

Female. Iris dusky hazel; bill, upper mandible dusky yellow, the under palish yellow; tarsi and feet dusky.

These birds are tolerably common; they feed upon the hard nutty seeds of small berries, common to many of the shrubs in Natal; the shell they appear easily to break, and then devour the kernel.

270. ESTRELDA NITIDULA, Hartl., sp. nov. Little Spotted-bodied Finch.

Sex uncertain. Shot by Mr. Norris.

This is a very scarce bird here; of its habits I know nothing.

[Dr. Hartlaub informs me that this is a species hitherto undescribed. He has named it as above, and has been so good as to furnish me with the following specific description, viz.:—

"Olivaceo-virescens, uropygio et supracaudalibus flavo-virentibus, macula anteoculari abindeque circa mandibulæ basin ducta fulvo-aurantia; subalaribus olivaceo et albido variis, abdomine maculis rotundatis albis nigro circumdatis pulchre guttato, cauda et alis olivaceis, rostro nigro, pedibus plumbeis.

"Long. 3″ 2‴; rostr. 3½‴; al. 1′ 9‴; caud. 1″ 2‴; tars. 6‴."

Dr. Hartlaub considers the specimen sent to be a female, and adds, "I think that I have seen the male amongst other novelties sent by Governor Nagtglas from the Gold-Coast to the Leyden Collection."—J. H. G.]

271. ŒNA CAPENSIS (Linn.). Long-tailed Cape Dove.

Female. Iris dusky brown; bill dusky, nearly black; tarsi and feet dark pink.

This I killed in January 1864; it is one of the scarcest birds here, and I have seen but three since my arrival in Natal some thirteen or fourteen years ago. This is the first I have shot; it was busily engaged in our garden, picking up, with extraordinary swiftness, some small grass seeds from the ground. The flight is even, and the beat of the wings extremely rapid. It is, as far as I know, the smallest of our Doves. The tail seemed to have a decided tendency to divide, or fork.

272. ŒDICNEMUS SENEGALENSIS, Swainson. Senegal Thicknee.

Male and *Female.* Iris light yellow; eye very large; bill black, with the exception of a patch over each nostril and the base of the lower mandible, which parts are yellow.

These birds are gregarious, and found amongst the mangroves at the head of the bay. In June and July they appear to be most plentiful, and are not to be found in the summer; they are very shy, and run out of sight amongst the low trees with great swiftness, and are on the whole difficult to get; I believe they feed at night.

The female is in size similar to, and in plumage rather duller than, the male; the bill is also darker or brownish at the tip. They are very good eating, if not too old.

[The bill of this species is longer and more developed than the bill of *Œ. crepitans* and most other species of the genus, showing an affinity to the allied littoral genera of *Æsacus* and *Dromas* which corresponds with the habitat of the bird, as indicated by Mr. Ayres in the above paragraph.—J. H. G.]

273. DROMAS ARDEOLA, Swainson. Salt's Dromas.

Male. Iris dusky; eye small; bill black; thighs, tarsi, and feet light bluish ash.

This is the only specimen of the kind I have seen; I killed it early one morning on the sea-shore; in appearance it much resembled a Long-legged Plover, and took wing immediately on my appearance, so that I had no time to notice its movements.

274. Squatarola helvetica (Linn.). Grey Plover.

Female. From the Monocusi River. Bill, tarsi, and feet black.

275. Hoplopterus armatus (Burch.). Black and White Spur-wing Plover.

Female. Iris very dark hazel; bill black; tarsi and feet dusky ash-colour.

These Plovers are plentiful in our bay during the winter, but I believe are not here in summer. They congregate in large flocks and are very shy, but they are also frequently found solitary. They feed on the mud banks, when the tide recedes, together with the Herons, Sandpipers, &c.; their flight is very rapid, and they run with considerable swiftness.

276. Ægialites tricollaris (Vieill.). Three-collared Ring-Dotterel.

Female. Iris very light dusky brown; bill dusky, pink or red at the base; eyelids crimson; tarsi and feet dusky pale.

These pretty little Plovers are by no means common; they are mostly found on the muddy banks of creeks, amongst the mangroves, either singly or in pairs; at first sight they might easily be mistaken for Water-Wagtails, their movements and appearance being very similar; their flight is rapid; they feed on small marine insects, and swallow a very fair share of pebbles to aid digestion.

277. Butorides atricapilla (Afzel.). Little Green-winged Heron.

Male and *Female.* Irides light yellow; bill, upper mandible dusky; lower greenish yellow, with dusky margins; tarsi and feet dusky on the upper surfaces, yellow on the under.

These birds are scarce, and appear to be very solitary in habits; they are found generally amongst the mangroves, either perched on some low bough or on the mud, and always in the shade, evidently preferring the darkness to light; if put up they invariably fly but a short distance and alight again in the shade, mostly at the foot of some low-spreading tree or under the bank of some creek.

278. NYCTICORAX GRISEUS (Linn.). European Night-Heron.

Irides pinkish or brick-dust colour; tarsi and feet light yellow.

These Herons are exceedingly scarce here; when found they are always amongst the dense mangroves and stationary; when disturbed they almost invariably alight again at a short distance, getting more and more wary each time they are put up.

The specimen sent was shot by my brother in June 1863. They feed, I believe, at night.

279. FALCINELLUS IGNEUS (Gmelin). Glossy Ibis.

Female. Iris dark; bill and legs black. From the Monocusi River.

Frequents the mud banks of the river.

280. NUMENIUS PHÆOPUS (Linn.). Whimbrel.

Female. Iris dusky; bill dusky, the under mandible pale at the base; tarsi and feet bluish ash-colour. These birds are not nearly so plentiful as the Curlews (*Numenius arquatus*), though they always feed and associate with them, and it is not always easy to pick them out from the flight; their habits are, I think, the same as the larger species.

281. TRINGA MINUTA, Leisler. Little Stint.

Male. Iris dusky; bill, tarsi, and feet black. These may be found feeding at low water amongst the mud and weeds in the bay. They are gregarious, and are, I think, only found here in winter.

[This species has also been obtained by Mr. Andersson at Walvisch Bay.—J. H. G.]

282. CALIDRIS ARENARIA (Linn.). Sanderling.

Female. Iris dusky; bill black; tarsi and feet black.

These pretty Sandpipers are found on the sea-beach; they are gregarious, and run about with great activity when feeding, following the waves as they retire, and obtaining their food on the very edge of the water. Their flight is very rapid.

[The specimens sent are in full winter dress.—J. H. G.]

283. ORTYGOMETRA PYGMÆA (Vieill.). Baillon's Crake.

Male. Iris brownish red; bill bright green, dusky on the ridge; tarsi and feet ashy-green.

This pretty little Crake I have only found in the vicinity of Maritzburg; it inhabits the swamps and rushy pools, creeping amongst the weeds and grass on the edges in search of food; when disturbed it flies but a few yards, and drops suddenly into the weed almost before the gun can be got to the shoulder, and is, therefore, not very easy to shoot; the early morning is the best time to look for these birds.

[This species has also been obtained in Damara Land by Mr. Andersson.—J. H. G.]

The following remarks apply to species which have been already enumerated in the previous lists of Natal birds.

TELEPHONUS ERYTHROPTERUS (Shaw). Tchagra Shrike. (No. 87, Ibis, 1860, p. 211.)

Male and *Female.* Irides dusky hazel; the bill black; the tarsi and feet light ash-colour.

This Shrike frequents the dense underwood and jungle, occasionally it is found in more detached bushes; its flight is weak, and it therefore trusts most to hiding for safety in the matted coverts; its notes are harsh; the food consists, I believe, entirely of insects; during its short flight the tail is frequently expanded, which gives the bird rather a showy appearance.

DRYMŒCA CURVIROSTRIS, Sundev. Curve-billed Drymœca. (No. 195, Ibis, 1863, p. 323.)

Male. Iris light brown; bill black, the under mandible being ash-colour towards the tip; tarsi and feet pale; total length 6¼ inches. The gape and mouth are *black.*

Female. Tarsi same colour as in the male, but more slender; bill, the upper mandible dusky, the under pale; the gape, mouth, and tongue *pale*; size smaller than the male.

[Both in this species and in *D. natalensis* the male bird considerably exceeds the female in size; these two species appear to belong to a somewhat distinct group from the smaller and less robustly-formed species of the genus *Drymœca*.—J. H. G.]

DRYMŒCA LEVAILLANTI, Smith. Le Vaillant's Drymœca. (No. 197, Ibis, 1863, p. 324.)

Male. Iris light brown; bill, upper mandible nearly black, under mandible pinkish-ash; tarsi and feet pale; the female is smaller in size, and the tarsi, feet, and irides are lighter in colour. Some of the notes of the pair sent were very loud, and exactly resembled those of *Juida phœnicoptera*, so much so, that I was astonished to hear, as I thought, one of the latter birds calling from the midst of a rushy swamp without a single tree in the vicinity.

CISTICOLA AYRESI, Hartl. Ayres's Cisticole. (No. 200, Ibis, 1863, p. 325, pl. viii. fig. 2.)

Male and *Female.* Bills very finely serrated.

FRANCOLINUS LEVAILLANTI, Temm. Le Vaillant's Francolin. (No. 241, Ibis, 1864, p. 354.)

Male. Iris hazel; bill dusky, yellow at base; tarsi and feet dull yellow. The female is very similar in plumage, but the spurs are wanting; they feed very much upon bulbous roots, which they scratch up, break to pieces, and devour; they are much esteemed both for sport and for the table; but the flesh of all our Francolins is, I think, dryer and of less flavour than that of the common English Partridge.

GERONTICUS HAGEDASH (Lath.). Caffer Ibis. (No. 48, Ibis, 1859, p. 248.)

Female. Iris very dark brown, with a narrow outer ring nearly white; bill black; ridge towards the base crimson; tarsi and feet dull red.

These birds are seldom solitary, generally occurring in small families of from four to ten or twelve. When feeding they much frequent the dense bush, and though usually very wary, will sometimes allow one to walk right in amongst them before they rise, which they then do all together, and with such a din as quite to startle even a person accustomed to such things. Beetles and insects form their food almost entirely. They are also fond of hunting in old mealy-gardens, and on the tops of high hills and amongst stones and rocks, where they find food in abundance. Their notes are loud and harsh, and may easily be heard at the distance of a mile or more in still weather. At the earliest break of day they leave their roosting-places, generally in high trees overhanging water, and return again as the sun is setting, or a little after, when they are easily shot, as the same birds always return to the same tree every evening; and the sportsman being hidden beneath, he easily loads his game-bag with them as they straggle home from their day's labour. These fine birds are now becoming very scarce, in consequence of their habits being so regular and so well known. They are very good eating when properly cooked. Their nest is built on a bough overhanging the water; it consists of coarse sticks lined with a little fine grass; the concavity is just sufficient to prevent the eggs, four in number, from rolling out; year after year the same pair, if undisturbed, build in the same tree.

THRESCIORNIS ÆTHIOPICUS (Lath.). Sacred Ibis. (No. 117, Ibis, 1860, p. 219.)

Female. Iris blackish brown, with an outer ring of dark crimson; bill, tarsi and feet, and bare skin of the neck black.

These Ibises are only here during the winter months, and then they are moulting, so that it is very difficult to get a specimen in anything like decent plumage; besides that, they are extremely shy and wary, tough to kill, and frequent such localities as almost invariably to fall in the mud, which ruins the delicate whiteness of the plumage; they are gregarious, and may often be seen feeding with the Egrets and Herons on the shrimps, small fish, and crabs which abound in the little streamlets and mud at low water at the head of the bay. The White Herons and Sacred Ibis are absent during the summer; no doubt they then resort to their breeding-haunts.

MYCTERIA SENEGALENSIS (Shaw). Saddle-bill Jabiru. (No. 173, Ibis, 1862, p. 34.)

[In a former paper above quoted, Mr. Ayres describes a female specimen of this Jabiru as having the iris of a "bright yellow." It would seem that this colouring of the iris is peculiar to the female bird.

The menagerie of the Zoological Society of London now contains an adult pair of Saddle-bill Jabirus, and also an adult pair of Indian Jabirus (*Mycteria australis*).

In each of these pairs of birds the larger individual, which Mr. Bartlett (to whom I am indebted for this observation) considers, and no doubt correctly, to be the male, has the iris of a very dark and deep brown; whilst the smaller bird of each pair, which Mr. Bartlett believes to be the female, has the iris of a clear straw-yellow.—J. H. G.]

XXV.—*Notes on some of the Birds inhabiting the Southern Ocean.*[*]

By Captain F. W. Hutton, 23rd Royal Welsh Fusiliers, F.G.S., Deputy-Assistant Quartermaster General at Dublin.

The notes that I have the honour to read to the Society this evening are compiled from personal observations made during seven voyages round the Cape of Good Hope, at various times of the year, and from information obtained from my friend Mr. Richard Harris, R.N., who was engineer on board Her Majesty's ship 'Adventure' in 1857, in which ship I made my last voyage. Mr. Harris sailed from London early in June 1832, with a sealing-party, and arrived at the Prince Edward Islands, in the Southern Ocean, in September. He stopped there until the following January, when they left for Kerguelen's Land, or Desolation, as the sealers call it. They reached this latter place at the end of January; and on the 16th of March, while they were on shore engaged in taking seals, their ship was wrecked, and they remained on the island until the 6th of December, when they made the bold experiment of sailing in a boat, built from the remains of their ship, for Tasmania, and happily reached Macquarie Harbour in safety after a voyage of six weeks. While Mr. Harris was on these little-known islands he made many careful observations of the habits of the birds that frequent them during the breeding-season, which he kindly communicated to me, and which, although made so long ago, will not, I trust, be found without interest. Most of these birds have been admirably figured and described by Mr. Gould in his 'Birds of Australia.' I have therefore confined myself to mentioning only those peculiarities of plumage and habits which are either new, or still disputed points. Before commencing, however, I wish to thank Dr. Sclater, Mr. G. R. Gray, Dr. Perceval Wright, and, more especially, Dr. A. Carte and Mr. Gould, for the kind way in which they have answered my numerous questions on many of the points touched upon in this paper.

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[*] Read before the Natural History Society of Dublin, March 3, 1865.

CHIONIS MINOR, Hartlaub. Lesser Sheath-bill.

This bird is common on both the Prince Edward Islands and Kerguelen's Land, and is called "Wide-awake" by the sealers. When Mr. Harris first landed, the birds were so tame that he frequently had to kick them out of his way; and when he hid himself behind the rocks they would come and peep over at him, chattering, and seeming quite pleased at having found him. They are always found near the sea, but do not fly much, only from one rock to another, and never leave the land. Mr. Harris never saw the nest or eggs of this bird, and therefore supposes that they breed in some place out of sight, either under the rocks along the shore, or in the high moss and grass, like the Skua-Gull.

LESTRIS CATARRHACTES (L.); *Stercorarius antarcticus*, Lesson. Gould, B. Austral. vii. pl. 21. Skua-Gull.

This bird is the "Cape-hen" of sealers, and the "Port-Egmont-hen" of Captain Cook. It does not skim over the water like the Petrels, but flies low with a heavy slow flapping of its roundish-looking wings, and is therefore easily recognized. It is rare at sea north of latitude 45° S., one individual only having come under my personal observation. It is, however, very numerous on the Prince Edward Islands and Kerguelen's Land, where it breeds on the low flats among moss and grass two or three feet high, making no nest, but laying three brown, dark-spotted eggs on the ground. The young birds are dark brown, mottled with white. During the breeding-season the old birds are very fierce, flying round the head of an intruder, dashing every now and then at him, and making at the same time a curious croaking noise in their throats. Mr. Harris has never seen one chasing another bird.

Diomedea exulans, L.; Gould, B. Austral. vii. pl. 38. Wandering Albatros.

Average breadth across the wings ten feet; the smallest measured being nine feet, and the largest twelve feet; length from tip of beak to end of tail four feet. Some have a rose-coloured streak on each side of the neck, as mentioned by Dr. Bennett in his 'Gatherings of a Naturalist in Australasia' (p. 72). I have never seen this on either the young or very old birds, and the only one I ever captured with it was a male. I have also only seen these marks between June and August, and I am therefore disposed to believe that they distinguish the middle-aged male bird previous to the breeding-season; but I am not sure of this. According to the experience of myself and Dr. Bennett, the food of the Albatros consists entirely of the oceanic *Mollusca*, small Crustaceans, *Medusæ*, and the refuse thrown overboard from ships. I have never found any remains of fish in its stomach; and, indeed, I do not see how it could catch them, for it never pounces suddenly, like a Frigate-bird or a Gannet, on anything floating in the water, but always settles first, and then devours it at its leisure; in fact, it sits down to dinner. For this reason it can only be caught with a hook when the ship is going slowly—not more than four or five knots—and when plenty of line can be payed out, so as to give the bird time to look at the bait before he swallows it. The best bait is a piece of the rind of raw salt-pork, as this is so tough that the small birds cannot get it off the hook. The hook need not be barbed, as it always catches in the curved end of the upper mandible. The bait must be floated by means of corks.

I have never seen the Albatros fly at night, and its habits are quite diurnal, both at sea and on land. It is rarely found north of latitude 30° S., but so constantly does it approach that limit, that I could generally predict the day on which we should see the first. In April 1854, however, when sailing from Cape

Town to St. Helena, in about latitude 26° S., one flew past the ship in a direct line southwards, without even stopping to look at us; and I suspect that it had either been caught and turned loose again after two or three days' imprisonment, or that it had followed a ship out of its usual haunts, and was now making the best of its way back again.

They are very common south of latitude 40° S., and monopolize nearly the whole of the Prince Edward Islands and the south-east portion, or lee-side, as the sealers call it, of Kerguelen's Land, to which places they retire to breed in October. The nest, which is always placed on high table lands, is in the shape of the frustum of a cone, with a slightly-hollowed top, and is made of grass and mud, which the birds obtain by digging a circular ditch, about two yards in diameter, and pushing the earth towards the centre until it is about eighteen inches high. In this nest the female bird lays one white egg, which is not hatched until January. The nest of the Albatros has been well described by Mr. Gould on the authority of Mr. Earle and Dr. M'Cormick; and I have mentioned it here only because Dr. Bree, who, in his 'Birds of Europe' (vol. iv. p. 120), has given the latest account of this bird, has reproduced the statement of Captain Carmichael, in his "Description of the Island of Tristan d'Acunha," in the Twelfth volume of the 'Transactions of the Linnean Society,' that it makes no nest; a statement which is certainly erroneous.

At a certain time of the year between February and June, Mr. Harris cannot exactly say when, the old birds leave their young and go to sea, and do not return until the next October, when they arrive in large numbers. Each pair goes at once to its old nest, and after a little fondling of the young one, which has remained in or near the nest the whole time, they turn it out, and repair the nest for the next brood. The deserted young ones are in good condition and very lively, frequently being seen off their nests exercising their wings. When the old birds return and take possession of their nest the young one often remains outside, and nibbles at the head of the old one until the feathers between the beak and the eye are removed, and the skin made quite sore. The young birds do not go far from land until the following year, when they accompany the old ones to sea. While the old birds are away it is difficult to imagine how the young ones obtain food, for Mr. Harris assures me that no old birds are seen near the islands for months together. Strange as this may appear, its very strangeness is in favour of its truth, as no one would think of inventing such a story; and its correctness is further corroborated by the abundance of Albatroses found at sea from April to October inclusive, and their comparative rarity, especially of the old white birds, during the rest of the year, which I believe to be the case. Of their abundance between April and October no one who has been in the Southern Ocean at that time of the year will doubt; and in the latter month, I know from my own experience that the old birds begin to get scarce. It is more difficult to collect sufficient evidence of their rarity from November to March, as few voyagers visit the regions they inhabit at this season of the year, and fewer still take notice of the birds. Dr. Pickering, however, who accompanied the United States' Exploring Expedition under Commander (now Admiral) Wilkes, states that this bird was only occasionally seen in January, while it was much more common in April; and Captain Cook's experience seems to have been much the same. In October and November 1772 Albatroses, he says, were common. In December and January they were scarce, or entirely absent; and but few seem to have been seen by him until he reached New Zealand, except on the 10th of February, 1773, when he reports an abundance; but on that day he was within a few miles of the south-east part of Kerguelen's Land, where they breed. He did not again visit these regions until the middle of December 1773, when he left New Zealand for the Pacific, and from this time until the following February, when he got too far north, he appears to have observed very few, most, if not all, being young birds. At the close of this year (1774) he doubled Cape Horn; but after November no mention is made of Albatroses—except that they were seen in Staten Island in January—until March 1775, when he says that some accompanied the ship every day until he got beyond their habitat. Sir James Ross, too, in his account of the voyage of the Erebus and Terror in 1839–43, never mentions Albatroses between November and March; and I am, therefore, disposed to believe that the old birds go to sea in March or April, when the young ones are about three months old. Mr. A. Earle, in his 'Narrative of Nine Months' Residence in the Island of Tristan d'Acunha,' as quoted by Gould, says that he saw old Albatroses "stalking about" their young in May; but as *D. exulans* can only just manage to get along on land by the help of its wings in a most awkward and ridiculous manner, which no one would think of dignifying by the term "stalking," I am of opinion that he mistook *D. melanophrys* for this bird. On his way out, Mr. Harris spent three weeks in August at Tristan d'Acunha, Nightingale Island, and Inaccessible Island, but never saw any Albatroses during the whole time. Mr. Harris says that when the old birds return in October he never saw them feed the young ones; and it is, therefore, evident that they must have some means of obtaining food for themselves. My impression is that the young birds are nocturnal in their habits, and go down to the sea at night, returning to their nests in the morning*. The instinct, or whatever it may be called, which enables the Albatros, after wandering over thousands of miles of trackless ocean, to find its way back to its young one every October is most extraordinary. Mr. Harris says that he feels quite certain that the same birds visit their old nests, and use them again for the next broods. In this case the landmarks which may guide the Swallow in its migrations are entirely wanting; and as the birds spread on all sides from their breeding-places, and, doubtless, sometimes traverse the whole globe, the position of the sun, which is the only natural guide that man possesses, cannot avail them anything.

The flight of the Albatros is truly majestic, as with outstretched, motionless wings he sails over the surface of the sea; now rising high in the air; now with a bold sweep, and wings inclined at an angle with the horizon, descending until the tip of the lower one all but touches the crests of the waves as he skims over them. Suddenly he sees something floating on the water and prepares to alight; but how changed he now is from the noble bird but a moment before all grace and symmetry. He raises his wings, his head goes back, and his back goes in; down drop two enormous webbed feet straddled out to their full extent, and with a hoarse croak, between the cry of a Raven and that of a sheep, he falls "souse" into the water. Here he is at home again, breasting the waves like a cork. Presently he stretches out his neck, and with great exertion of his wings runs along the top of the water for seventy or eighty yards, until, at last, having got sufficient impetus, he tucks up his legs, and is once more fairly launched in the air. It is, I presume, this necessity of running along the top of the water before he is able to ascend from it, which has given rise to the fable—as I think I may call it, although still quoted by some of the best naturalists—of the Albatros being able to walk on the surface of the water with hardly any assistance from its wings, and that the noise of its tread may be heard at a great distance, which originated with Captain Weddell in his 'Voyage towards the South Pole in 1822-24.'

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* Mr. Harris does not agree to this. In a letter to me, dated H.M.S. 'Medusa,' 19th March, 1865, he says that "the fact that they would stand to exercise their wings, shows that they had not yet got the proper use of them"; also that he "never saw them upon the wing until the return of the old ones"; and further, that the situations that some of them occupied were such as to make it "impossible for them to get to the water except by flight."

I have never seen this bird dive. When caught and placed on deck, they are unable to stand or rise from it unless a strong wind is blowing, but lie almost helpless on their breasts. After they have been on board a few minutes they generally, but not always, throw up a large quantity of oil. I have sometimes sailed past an Albatros sitting on the water, and it has not got up to join the other birds flying round the ship, but remained on the water until out of sight—a thing I have never observed in any other of the Petrels. I have not seen Nuttall's original account of this bird; but, as quoted by Dr. Bree, in his 'Birds of Europe,' it seems nearly as full of errors as words. He has evidently confounded the North Pacific species, *D. brachyura*, with *D. exulans*, although they are quite distinct*.

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* This confusion seems to have been made by most of the writers on North American ornithology. Mr. Lawrence, however, has clearly distinguished the two species (Baird's B. N. Am. p. 821). *Diomedea exulans* has probably never occurred on the coast of the United States.—Ed.

Diomedea melanophrys, Boie; Gould, B. Austral. vii. pl. 43. *D. chlororhynchus,* Lath. ?, *D. culminata,* Gould? Black Eye-browed Albatros.

Breadth across the wings seven feet; length three feet. Mr. Gould says that there is no difference between the young and the old birds, except in the colour of the beak; but in this statement I cannot concur. According to my observations, the head in the young is grey, which, as the bird grows older, becomes white—first on the cheeks, and then spreading to the top of the head, leaves a collar round the neck, which breaks first in front, and gradually spreads upwards until the whole is white. The beak remains dark blue for some time after the plumage has assumed the colours of the adult. The feet and legs of the young bird are light blue.

I am unable to give any new information as to where this bird breeds, as it is never seen on the Prince Edward Islands nor Kerguelen's Land. Commander Snow, in his 'Two Years' Cruise off Terra del Fuego,' says that it breeds in the Falkland Isles, and describes its nest as similar to that of *D. exulans,* but not more than twelve inches high; and Captain Carmichael states that it breeds in Tristan d'Acunha.

Mr. Gould says that it is more easily caught than *D. exulans*; but my experience is just the contrary. When on board it stands pretty firm on its legs, and I have never seen it vomit oil, as most of the Petrels do. It dives sometimes, but does not appear to like doing so, generally preferring, when anything good to eat is under water, to let a "Night-Hawk" fish it up; then giving chase, and running along the top of the water, croaking, and with outstretched wings, it compels him to drop it, and then seizes it before it sinks again. This bird is called "Molly-Hawk" by sailors. It is common round Cape Agulhas; and in August 1857 I saw a large number in False Bay and round Cape Hanglip. It is, apparently, quite diurnal in its habits, both at sea and near land. *D. chlororhynchus,* Lath., differs from *D. melanophrys* only in the rather lighter tint of the mark over the eye and in the colour of the beak; in size and habits it is precisely similar; and as the beak of *D. culminata,* Gould, is just intermediate in colour between the two, I am of opinion that all three form but one species. I am aware that Captain Carmichael states that the nesting of the two is different; but, as he has wrongly described the nesting of both the other species of Albatros, I cannot trust his account without further evidence. No one acquainted with these birds can read Latham's description of *D. chlororhynchus* without at once seeing that he is describing an immature bird.

Diomedea fuliginosa, Gmel.; Gould, B. Austral. vii. pl. 44. Sooty Albatros.

Some of these birds are grey on the back and head, with the exception of a broad black stripe round the beak, which gives the head something the look of a Jackdaw's. I am unable to say whether these are young or very old birds; but as their legs and feet are yellow, I incline to think the latter. It breeds in the inaccessible cliffs of Kerguelen's Land and the Prince Edward Islands, and Mr. Harris was never able to get at a nest. It has an unpleasant habit of screeching at night, and is called "Pee-u" by the sealers. Sir J. Ross mentions that he saw young birds fully fledged, and, as he says, "ready to go to sea," in May, at Kerguelen's Land; and, as no mention is made of old birds, this species may have the same habit of deserting its young that *D. exulans* has. It is, however, so shy that Mr. Harris made very few observations on its habits. The remarks of Mr. Gould, that this bird is very wary, and seldom caught, and that it alone of all the Petrels flies directly over the ship, are quite correct.

Procellaria gigantea, Gmel. *Ossifraga gigantea*, Bp. Consp. Av. ii. p. 186. Gould, B. Austral. vii. pl. 45. Giant Petrel.

This bird breeds in the cliffs of the Prince Edward Islands and Kerguelen's Land, but the nests can be got at occasionally. The young are at first covered with a beautiful long, light-grey down; when fledged they are dark brown, mottled with white. When a person approaches the nest the old bird keeps a short distance away, while the young ones squirt a horridly smelling oil out of their mouths to a distance of six or eight feet. It is very voracious, hovering over the sealers when engaged cutting up a seal, and devouring the carcass the moment it is left—a thing the Albatros never does. It is the "Mother Carey's Goose" of Cook, and the "Nelly" of sailors. It sometimes chases the smaller species, but Mr. Harris has never seen it kill one. Whether or not it can catch birds possessed apparently of powers of flight superior to its own is doubtful; but, supposing one killed, that it feeds only on its heart and liver, I cannot believe, although it is said to do so in the works of many first-rate ornithologists; a statement which seems to have been copied from Lord Macartney's 'Embassy to China in 1712,' and since handed down from one naturalist to another as an heir-loom.

PROCELLARIA ÆQUINOCTIALIS, L. Black Petrel.

Black, with a white mark, generally crescent-shaped, but very variable, on each cheek. Chin white; beak yellow, with a black tip; legs and feet black. As the plumage of the bird here described is intermediate between the *P. æquinoctialis* of Linnæus and the *P. conspicillata* of Gould, I agree with Mr. Gray in ranking them as one species only. It is not known on Prince Edward Islands nor on Kerguelen's Land; and I have only seen it in the South Atlantic, between lat. 26° S. and lat. 35° S. Among sailors it rejoices in the name of "Stink-pot."

PROCELLARIA HÆSITATA, Licht. (*nec* Kuhl)[*]. *Adamastor typus,* Bp. Consp. Av. ii. p. 187. *A. cinereus,* Coues (*ex* Gm.), Proc. Acad. Philad. 1864, p. 119. Gould, B. Austral. vii. pl. 47. Great Grey Petrel.

This bird combines the appearance of a *Procellaria* with some of the habits of a *Puffinus.* Its feathers fit very close, and have a glossy look. Like all other Petrels it flies with its legs stretched straight out behind, and, as in this bird they are rather long, they make the tail appear forked. Its cry is something like the bleating of a lamb. The young bird has been figured and described by Dr. Andrew Smith in his 'Illustrations of South

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[*] According to our contributor's wish, we have not altered his nomenclature. This bird is, however, of a very different species, and belongs to a very different group, from that which Kuhl, in 1820, described as *P. hæsitata.* The latter, the type of Bonaparte's genus *Æstrelata,* is from the West Indian Seas (*cf.* Ibis, 1859, p. 372, *note*), whence it has strayed both to France (Consp. Av. ii. p. 189) and England (Zool. p. 3691).

African Zoology,' under the name of *Puffinus cinereus.* It is very common at sea from May to August; but retires to Kerguelen's Land and other places in September or October, to breed. Each pair burrows horizontally into wet peaty earth, from two to eighteen feet. At the end of the hole they form a large chamber, and construct in the centre of it a nest similar, except in size, to that of the Albatros (*D. exulans*), in the hollowed top of which the female lays one white egg. They seldom leave their burrows in the daytime, and when one happens to do so it is at once hunted by a "Nelly," although no such jealousy exists at sea. From this habit of flying only by night it is called "Night-Hawk" by the sealers.

Mr. Harris's party, when wrecked on Kerguelen's Land, used to dig these birds out of their burrows, and eat them; and in order to save useless digging, for their spades were only made from the staves of old casks, they would hold one to the mouth of a hole, and make it cry out, when, if another was inside, it would answer. Mr. Harris informs me that he never saw the Night-Hawk on the Prince Edward Islands, but as his party was not then in want, they were not hunted for, and they may therefore breed there also; for, as they conceal themselves by day, they might easily have remained unobserved. This bird is by far the best diver of all the sea-going Petrels. It seems even fond of it, and often remains under water for several minutes, when it comes up again shaking the water off its feathers like a dog. Sometimes I have seen it, as it flies past, poise itself for a moment in the air (and hence perhaps its name) at a height of about twenty or twenty-five feet above the sea, and, shutting its wings, take a header into the water. It dives with its wings open, and uses them under water much in the same manner as when flying.

PROCELLARIA MACROPTERA, Smith. *Pterodroma macroptera*, Bp. Consp. Av. ii. p. 191. Long-winged Petrel.

This bird, when on the wing, looks very like a huge Swift. It is not by any means common; and I have only seen it east of the Cape of Good Hope. It is not found on the Prince Edward Islands nor Kerguelen's Land.

PROCELLARIA GLACIALOIDES, Smith. *Thalassœca glacialoides,* Bp. Consp. Av. ii. p. 191. Gould, B. Austral. vii. pl. 48. Silvery-grey Petrel.

Back, wings, head, and tail ash-grey, with a rudely-shaped circular ring of black near the tip of each wing; rest of the body white. Not common, and not seen by me east of the Cape of Good Hope. Not found on the Prince Edward Islands nor Kerguelen's Land. I presume that this is the bird figured by Gould, although neither he nor Dr. Smith mention the dark mark on each wing.

PROCELLARIA MOLLIS, Gould, B. Austral. vii. pl. 50. *Cookilaria mollis,* Bp. Consp. Av. ii. p. 190. Soft-plumaged Petrel.

Not found on the Prince Edward Islands nor on Kerguelen's Land. They fly well, with their wings a little bent back, like a Sandpiper. I think it probable that this bird will prove to be the young of *Procellaria cooki,* Gray.

DAPTION CAPENSIS (Linn.); Gould, B. Austral. vii. pl. 53. Pintado-Petrel.

Across the wings three feet, length fifteen inches. When caught and brought on board ship it throws up from its mouth, as soon as touched, a quantity of red, strong-smelling oil—not as a means of offence or defence, but simply from fright. Mr. Gould states that when irritated it ejects an oily fluid from its nostrils, but this I have never observed. They cannot rise from the deck, but run along with outstretched wings. Their cry is like the sound made by drawing a piece of iron across a large-toothed comb—"cac, cac, cac-cac, cac," the third being pronounced the quickest. It is called "Cape-Pigeon" by sailors. Curiously enough, although this bird is by far the commonest of all the Petrels, and is so distinct in plumage that no one can mistake it, yet its breeding-place is, I believe, not known with certainty. In Mr. Gould's account of the bird I find "it is said to breed in Tristan d'Acunha," but Captain Carmichael does not mention it. Mr. Darwin (Zoology of the Voyage of the 'Beagle') was informed that the sealers know of no other place where it resorts to breed but the island of South Georgia; and it certainly is not found on the Prince Edward Islands nor Kerguelen's

Land. Sir J. Ross, however, mentions having seen flocks of young birds in January 1841, in lat. 71° 50′ S., near South Victoria; and it seems, therefore, probable that they breed on islands in the Antarctic Ocean, far south of the homes of the Albatros.

Latham says that they vary much in colour, but I have always been surprised at their great constancy; and as I could detect no difference in them, I suppose that the young birds remain near their breeding-places until they have attained the plumage of the adult. According to my experience their northern limit is lat. 27° S.; but they sometimes follow a ship as far as 24° S., and one once followed the ship I was in as far as 17° S. On that day I saw Tropic-birds, flying-fish, and a Cape-Pigeon, all together—a most unusual occurrence; the thermometer, however, was only 70° F. in the shade. These and other small birds are much more easily caught with a thread than with a hook. The *modus operandi* is as follows:—A small piece of wood about an inch and a half long is tied by its middle to a line of white thread or silk; this is put over the stern and allowed to float out some thirty or forty yards. The birds, flying under the ship's stern, strike against the thread and entangle their wings in it; they are then hauled gently on board. If the ship is going fast the thread will not be strong enough to hold them, for if it is too thick they will see and avoid it.

PRION VITTATUS (Gmel.); Gould, B. Austral. vii. pl. 55. Broad-billed Prion.

Across the wings two feet, length ten inches. They generally fly in flocks, with a sharp motion of the wings like a Snipe. I can confirm the remark of Captain (now Sir George) Grey, the present Governor of New Zealand, that it is never seen to sit on the water. It is called "Whale-bird" by sailors. According to Captain Carmichael, this bird breeds on Tristan d'Acunha. It is not found on the Prince Edward Islands nor Kerguelen's Land.

Besides these birds, Mr. Harris says that a few Ducks were found on Kerguelen's Land, and that Penguins were common upon all the islands. A night or two after their ship was wrecked they lit a fire upon the rocks, when, to their astonishment, a large quantity of Stormy Petrels flew into it, and others dashed themselves against the rocks on which the fire was lighted, although these birds were rarely seen in the daytime. This shows that these birds are nocturnal in their habits when near land; at sea, however, they are much more common in the daytime than at night; and I have never heard of one of them, or any other Petrel, flying into a ship's port with a light in it, although this is by no means uncommon with flying-fish.

The extraordinary number of ocean-birds found in the cold regions of the earth, in comparison with the small number found in the tropics, is a very remarkable fact, as it is exactly the reverse of what we see on land. It can, however, I think, be accounted for as follows:—The higher plants have to deoxidize large quantities of water and carbonic acid, for the formation of the sugar, various kinds of oil, camphor, resin, &c., that they secrete; but this process absorbs an equally large amount of heat and light, which can only be supplied by the sun, consequently they must inhabit warm or temperate climates, and live on land, or, at any rate, must have the greater portion of their leaves exposed directly to the air; for water is such a powerful absorbent of heat-rays, that a depth of a few inches only is enough to prevent nearly all those that reach the earth on a cloudless day from penetrating further. The lower plants, however, which have little to develope but cellulose and chlorophyll, require less light, and but little heat; they are thus enabled to live under water, and in regions where the more highly organized forms would die, and, being unopposed, they increase here in number and dimensions far more than in warmer latitudes or on land. Now, as water maintains a more equable temperature than land, it follows that in cold regions the sea supports nearly the whole of the vegetation. This entails an equally large population of the lower marine animals, which subsist on the vegetation, and in their turn supply food to the Petrels, which, carrying about with them in their lungs an apparatus for producing heat, are not under the same necessity as the higher plants of living only in warm climates; but, as the heat in summer is much less in the southern hemisphere than in equal latitudes in the northern, the marine plants, and, consequently, the Petrels, approach much nearer the equator in the Antarctic than in the Arctic seas. On the other hand, although the number of individuals is immense, the species are few, which is, doubtless, owing to the uniformity of the conditions under which they live.

It is very curious to note that most of the species of the *Procellariidæ* inhabiting the northern hemisphere have "analogues," or closely resembling species, in the southern hemisphere. For instance, the Albatros of the North Pacific Ocean, *Diomedea brachyura*, Temm., very closely resembles *D. exulans*, L., although it is undoubtedly distinct from it. *Procellaria glacialis*, L., and *Procellaria pacifica*, Audub., again, are nearly related to *Procellaria glacialoides*, Smith; *Puffinus cinereus* (Gmel.) and *Puffinus major*, Faber, to *Procellaria hæsitata*, Licht. (*nec* Kuhl); *Puffinus anglorum*, Temm., and *Puffinus obscurus* (Gmel.) to *Puffinus assimilis*, Gould; and the Stormy Petrels of the northern seas, with the exception of *Thalassidroma leachi*, Temm., differ from those of the southern seas only in some minor points of plumage, *Thalassidroma oceanica* (Kuhl) being, as far as I know, the only Petrel common to both hemispheres. But while most of the northern Petrels have representative species in the southern hemisphere, many of the southern ones find no analogue in the northern hemisphere—e. g. *Procellaria gigantea*, Gmel.; *Daption capensis* (Linn.); *Prion vittatus* (Gmel.); *Pelecanoides urinatrix* (Gmel.), &c. These facts make it appear probable that the northern species crossed over the equator from the southern hemisphere, perhaps during the glacial period, and, having been isolated ever since, have varied somewhat from the parent forms; and the fact that, in the three cases I have mentioned, two distinct species in the northern hemisphere are closely related to one species in the southern hemisphere, points also to the same conclusion. The great extent of land in the northern hemisphere will probably explain why the genus *Puffinus*, whose habits are the least oceanic of any (except *Pelecanoides*, which does not appear to have crossed the tropics), has been so largely developed in those seas, while that of *Procellaria* is restricted to two closely allied species. The only two species of *Procellaria* at present known to inhabit the tropical parts of the Pacific are also each represented in the Southern

Ocean—viz., *P. parvirostris*, Peale, by *P. cooki*, Gray; and *P. rostrata*, Peale, by *P. lessoni*, Garn.; they both, however, differ more in colour from their types than the Arctic ones do from theirs. *Thalassidroma lineata*, Peale, also from the torrid zone of the Pacific, is a representative species of *T. melanogaster*, Gould.

The shape of the beak of the Petrels is another point well worthy of notice, so formidable is it in appearance, so harmless in reality; the bite of the Albatros even being attended with but little inconvenience, unless the point of the beak happens to catch the hand, as the whole of the inner parts are quite soft, and yield to a slight pressure of the finger. The natural food of the Petrel tribe consists of small fish, the shell-less molluscs, small crustaceans, *Medusæ*, &c., which are swallowed whole, and they do not therefore require a sharp beak fitted for cutting or tearing; for, although they may now and then regale themselves on the body of a dead seal or whale, it is evident that before sealers and whalers existed their opportunities for doing so must have been few and far between—perhaps not more than once in their lives; and if dead whales and seals were their usual food they would find the tube, formed by the nostrils on the top of the beak of many of the species, very disadvantageous, as it must prevent them striking their beaks deep into the blubber. Of what use, then, it may be asked, is the sharp, curved point of the beak? I believe it to be of little or no use; but that it simply marks their close relation to, perhaps their direct descent from, the Skuas (*Lestris*), who use it in their attacks upon Gulls. It cannot be said that those species which burrow require a harder beak than the Sand-Martin, or that those species which throw up mounds require one stronger or more sharply curved than the Flamingo; and it is certain that, for the capture of their prey, the hooked point is no more wanted in the Petrels than in the Kingfishers, Herons, Divers, &c., and not so much so as in the Gulls (*Larus*), some of which occasionally kill and devour small birds. This opinion is further strengthened by the fact that the young *P. gigantea* very much resembles in plumage the young *L. catarrhactes*, and it also inherits its habit of chasing other birds.

It is well known that all crepuscular birds have some organ more highly developed than usual, in order to compensate for the difficulty they have in seeing at night—*e. g.* the ear in the Owl, and the mouth in the Nightjar—and there can be no doubt that the prolongation of the nostrils in the family *Procellariidæ* is for the same purpose. The habits of *Diomedea,* where the tube is reduced to a minimum, are diurnal, except perhaps while the birds are young; they do not, therefore, require their sense of smell to be more than ordinarily acute. The various species of *Puffinus* and *Pelecanoides,* too, in which the tube is not so well developed as it is in *Procellaria* and *Thalassidroma,* although eminently nocturnal, take their prey chiefly under water, where smell cannot be of much use. The slanting position of their nostrils would also prevent the water being forced into them when diving. The tube is larger in *Procellaria gigantea* than in any other species of the family; and its extremely voracious appetite makes it appear probable that it requires means for obtaining food superior to any of the others.

Another point of great interest connected with these birds is the way they sometimes follow a ship for days together, and are seldom seen to settle on the water. I have been informed by Lieutenant Weld, R.N., that a Cape-Pigeon, with a piece of red ribbon round its neck, once followed the ship he was in for 1500 miles, and an albino variety of *P. gigantea* followed Mr. Gould's ship for three weeks, though this bird has by no means the same powers of flight as the Albatros. I myself have sometimes seen the same Albatros, or Cape-Pigeon, for several days in succession, while the ship has been going from 150 to 200 miles in the twenty-four hours; but these are exceptional cases.

It is, I believe, the generally received opinion of naturalists that these birds, when seen for several days together, have never slept during the whole period, but have followed the ship night and day. To me, however, it appears incredible that any animal should be able to undergo so much exertion for so long a time without taking rest; and I hope to show that it is not necessary to suppose that it does do so. Mr. Gould says that birds caught and marked are generally seen next day; but such is not my experience. I have sometimes marked ten or twelve Cape-Pigeons in a day, and seldom seen one again. Mr. Gould, however, is quite right when he says that sometimes a marked bird turns up after being absent for two or three days; and how can this be accounted for by the theory of the birds constantly following the ship? Most of the Petrels, more particularly those that burrow, or live in holes in rocks, are, no doubt, nocturnal in their habits when they are on or near land; but, when they are at sea, they all become more diurnal. A few can certainly be often seen flying under the stern at night; and once, when I was keeping the middle watch, at about one o'clock A.M., a Cape-Pigeon, in crossing over the ship, struck a rope and fell on deck. Still they are never numerous; and, where there were fifty or a hundred birds in the daytime, there are only one or two at night.

Their defenceless condition is, as far as I can see, the only reason for the Petrels hiding themselves by day, and flying by night, for the oceanic *Mollusca*, &c., on which they feed, are equally diurnal and nocturnal. At sea, however, where they have no enemies to fear and no holes to hide in, the conditions are quite different, and it is then better for them to take their rest at night, and to be alert and feeding in the daytime, and they change their habits accordingly. I, therefore, believe that, although a few may follow a ship for a night, most of them sleep on the sea, and in the morning, knowing very well that a ship is the most likely place to obtain food, they fly high with the intention of looking for one. Some find the ship that they were with the day before; some another one. In the latter case, if the second ship is going in an opposite direction to the first, they are never seen by the first again; if, however, the course of the two ships is the same, the bird might very likely lose the second ship and rejoin the first, after a lapse of two or three days. A height of 1000 feet would enable a bird to see a ship 200 feet high more than fifty miles off; and often, although unable to see a ship itself, it would see another bird which had evidently discovered one, and would follow it in the same way that Vultures are known to follow one another. This opinion is much strengthened by the fact that at sunrise very few birds are round the ship, but soon afterwards they begin to arrive in large numbers; and I think I may safely say that this is always the case; for, having had to be on deck from four to eight o'clock every third morning for six of my voyages, and about once a week during my last voyage, I have had better opportunities for observing this than most people. Sir J. Herschel states, in his 'Physical Geography' (p. 347), that the Albatros sleeps on the wing; but, to the best of my knowledge, no one has seen this, and it appears to me to be quite impossible; for, as I shall presently show, the bird cannot sustain itself in the air unless it has an onward movement, and if this movement was given by the wings, sleep would be no rest to it.

The unrivalled flight of the Albatros has been the admiration of voyagers from the earliest time. Day after day, with unabated interest, I have watched them, and I quite agree with Mr. Gould that the Sooty Albatros (*D. fuliginosa*) carries off the palm from all competitors. Never have I seen anything to equal the ease and grace of this bird as he sweeps past, often within a few yards, every part of his body perfectly motionless except the head and eye, which turn slowly, and seem to take notice of everything. I have sometimes watched narrowly one of these birds sailing and wheeling about in all directions for more than an hour, without seeing the slightest movement of the wings. This, however, is longer than usual. Wonderful as is this power of flight, it can all be explained by the simple mechanical laws which govern the direction and magnitude of pressures. Dr. Bennett states that he believes "that the whole surface [of the body of the Albatros] is covered by numerous air-cells, capable of a voluntary inflation or diminution by means of a beautiful muscular apparatus. * * * * * * By this power the birds can raise or depress themselves at will." Now, I do not for a moment doubt the existence of this apparatus, for it is well known that all birds have it to a greater or less extent; but I *do* doubt its capability of doing the duty assigned to it, viz. raising the bird in the air. The temperature of the Albatros, as taken by Sir G. Grey, by placing a thermometer under the tongue, is 98° F., and if we add 10° F. to this, in order to allow for the difference between the head and the body, we shall have the temperature of the air-cells at 108° F. The temperature of the surrounding air cannot be taken lower than 48° F., as the mean winter temperature of lat. 50° S. is about 50° F. The bird, therefore, could not raise the temperature of the air taken into these cells more than 60° F. This would increase its volume not quite one-eighth; and taking 100 cubic inches of air to weigh 31 grains, and the average weight of an Albatros to be 17 lbs., as given by Gould, it would be necessary, in order that the specific gravity of the bird might be brought to that of the atmosphere, that these cells should contain 1,820 cubic feet of air; or, in other words, they must be more than 1,200 times the size of the body itself of the bird, which, to say the least, would give it when flying an aldermanic appearance, which I have never observed. In fact, it would require a sphere of more than fifteen feet in diameter to contain the necessary quantity of air. Even if it could thus buoy itself up, it would entirely defeat its own object; for it would at once destroy the whole of its momentum, and, unless propelled forward by its wings, would drift helplessly to leeward. However, I do not wish it to be inferred that I consider the air-cells of no use. The greater portion of them are situated round the neck, wings, and forepart of the body of the bird, and I believe that by their means he is enabled to shift slightly the position of his centre of gravity, and thus, with very slight muscular exertion, to vary the inclination of his body to the horizon, according to the rate at which he is moving through the air.

Dr. Bennett, in his 'Gatherings of a Naturalist' (p. 78), gives a diagram explanatory of the flight of the Albatros; and, if I understand him rightly, says (Ibis, 1862, p. 90) that it cannot sail* directly against the wind, but only in the way which sailors call "close-hauled." This diagram represents a square-rigged ship sailing six points from the wind, a cutter sailing four and a half points, and an Albatros flying two points from the wind; from which I infer, although he does not expressly say so, that he considers that the wind helps forward the Albatros in the same way that it does the ships. But that this is erroneous is apparent at a glance. A ship can sail at an acute angle with the wind, because the pressure of the wind against its sails being met by the resistance of the water is resolved into pressures having other directions. Advantage of this being taken by trimming the sails, it ultimately results that the ship is moved in the direction of least resistance, viz. forwards. If, however, the pressure of the wind had not been met by the resistance of the water, no resolution of it into other directions could have taken place. For this reason a balloon can only drift with the wind, and the same would be the case with the Albatros. Moreover, the statement that he cannot sail against the wind is incorrect, as Dr. Bennett himself said in his first book, 'Wanderings in New South Wales;' the truth being that he is more often seen sailing in this direction than in any other, for the simple reason that as he moves slower against the wind than with it, he is obliged to keep going for a longer time in the former direction than in the latter, in order to retain his position near the stern of the ship. However, when sailing against the wind the position of his wings, body, and tail, slanting a little downwards, is somewhat analogous to the sails of a ship close-hauled, or, still better, to the position of a kite in the air; the momentum of the bird taking the place of the resistance of the water, or the string of the kite. This momentum is entirely owing to impulses previously given to the air by means of his wings, and when, owing to the resistance of the air, it has decreased so much that he is no longer able to move with sufficient rapidity to prevent his falling, fresh impulses have to be given. For this reason, Albatroses sail much longer in fine than in stormy weather, rain especially soon destroying their momentum, and frequently obliging them to use their wings for propulsion.

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* In this paper I use the word "sail," for want of a better one, to denote the power these birds possess of flying for a considerable time without moving their wings, and the following remarks relate to this mode of flying only.

It is by combining, according to the laws of mechanics, this pressure of the air against his wings with the force of gravity, and by using his head and tail as bow and stern rudders, that the Albatros is enabled to sail in any direction he pleases, so long as his momentum lasts. If, when sailing against the wind, the inclination of his body is such that the upward pressure of the wind against his wings and body just balances the force of gravity, his momentum alone acts, and he sails straight in the "wind's eye." If he wishes to ascend he inclines his body more to the horizon by means of his head and tail. If he wishes to turn to the right he bends his head and tail slightly upwards, at the same time raising his left side and wing, and lowering the right in proportion to the sharpness of the curve he wishes to make, the wings being kept quite rigid the whole time. To such an extent does he do this that, in sweeping round, his wings are often pointed in a direction nearly perpendicular to the sea; and this position of the wings, more or less inclined to the horizon, is seen always, and only when the bird is turning. It will be observed that, on this principle, an Albatros sailing down wind must necessarily be descending, unless his pace is much greater than that of the air, and such I have found to be invariably the case.

It may be objected that the resistance of the air must soon destroy his momentum; but the fact is that it does not do so. A good illustration of this is seen in an experiment, common in lecture-rooms a few years ago, by which the rotation of the earth was demonstrated by means of a pendulum, composed of a metal ball suspended by a long string from the ceiling of the lecture-hall. The impetus obtained by causing the metal ball to fall through the space of a few feet only was sufficient to keep the pendulum swinging, with a velocity but little diminished, for the greater part of an hour, notwithstanding the resistance of the sand, which the point of the pendulum had to cut through twice during each vibration. The resistance of the air is well known to depend on the shape and velocity of the moving body, and to increase in proportion much more rapidly than the velocity increases. For this reason a properly shaped body and a low velocity are required to reduce it to a minimum. A certain amount of weight is also necessary to give a bird momentum sufficient to overcome the resistance for a certain time, and wings are required of sufficient expanse to support it as it sails slowly through the air. These conditions are admirably carried out in the Albatros; its expanse of wing is perhaps greater than that of any other bird, and its weight, 15 lbs. and upwards, is very large. Its shape, also, when the neck is stretched out, as in flying, approaches very nearly to that of Newton's solid of least resistance, while more than one voyager has remarked the slowness with which it sails past. The Petrels I have mentioned sail very nearly in proportion to their size and weight. The Stormy Petrel never sails; the Cape-Pigeon only for a very short time, perhaps a minute; the "Night-Hawk" much longer, often between five and ten minutes; while the Albatros, as I have before mentioned, sails sometimes for an hour, "rising and falling," says Dr. Bennett, "as if some concealed power guided its various motions, without any muscular exertion of its own," but which we must only look upon as another illustration of the small resistance offered by the air to the passage of a properly-shaped heavy body moving through it with a low velocity.

XXVI.—*Notes on Birds breeding in the Neighbourhood of Sydney.*

By Edward P. Ramsay.

[Continued from 'The Ibis' for 1864, p. 245.]

7. Pardalotus striatus (Gould, Birds of Australia, vol. ii. pl. 38)*.

During my first visit to Cardington, on the Bell River, in the Molong district, I was much surprised and delighted at finding this beautiful species of Pardalote in that neighbourhood. My brother, Mr. James Ramsay, informed me at the time that this bird arrived every year about the beginning of October, and would shortly begin to breed. This I found to be the case. In the course of a few weeks they took possession of their usual breeding-places, a batch of old nests of the Fairy-Martin (*Chelidon ariel*). These they lined with grass and stringy-bark, making a nest similar to that of *Pardalotus punctatus*. The eggs varied from three to five in number. They are very ovate, and of a glossy white; in length 7½ to 8 lines by 6½ to 7 lines in breadth. About three weeks after the Pardalotes had taken possession of these nests, the rightful owners returned; but, finding the usurpers unwilling to turn out, the Martins contented themselves by building new nests, and repairing those that had been broken down.

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* I at first thought that this species had been *P. affinis*. I was led into the mistake by the rarity of *P. striatus* about Sydney, and also by receiving from the southern colonies specimens of *P. affinis*, which may be easily distinguished from *P. striatus* by having the tip of the spurious wing yellow, and the third primary only being white on the outer web. *P. punctatus* is the most common species found near Sydney. There is a variety (?) which sometimes, though not very commonly, occurs about Sydney. This has the tip of the spurious wing deep orange, and the lines on the head are more even and more backwardly placed than in the common form. Mr. Gould informs us, he believes these to be young birds; but I have, however, found them breeding in September and October, and have met with them in flocks of considerable numbers, from which I procured no specimens with the orange tip to the spurious wing, although I have shot over a dozen from the same party. *Pardalotus affinis* arrives here during the months of August and September, and may be found in company with *P. punctatus*, searching for insects and their larvæ among the tops of the young *Eucalypti*, from the torn edges of the leaves of which

8. CHELIDON ARBOREA (Gould, vol. ii. pl. 14).

About the end of November in the same year, 1860, I discovered a large batch of nests of this species fastened under an overhanging rock upon the banks of the Bell River. I counted upwards of one hundred nests, all built up together so closely that of many the entrances were alone visible, the nest itself being built round by others.

No Pardalotes were here to disturb them; and the Martins were flying to and from the nests in great numbers, some carrying in grass for the linings, others busily employed in repairing the old and building new nests with the mud from the river's bank. Many also I found were brooding their eggs, and this gave me a good opportunity of procuring some specimens, which I did not fail to seize. There were usually from three to five eggs, but some nests contained seven. Many of the eggs were altogether white, others were spotted with light brownish-yellow, occasionally all over, in other instances only at the

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they get a kind of "manna" that they seem particularly fond of. This also forms a great part of the food of the young birds of all three species.

[*Pardalotus affinis* has hitherto been thought to be peculiar to Tasmania. If we are not mistaken, this is the first record of its occurrence in Australia. —ED.]

larger end. They vary in length from 7 to 8½ lines, and from 6 to 6½ lines in breadth.

9. CHELIDON ARIEL (Gould, vol. ii. pl. 15).

The Fairy-Martins arrive about Sydney early in August, and begin to build towards the end of September. They invariably return to the same old building-places, under the eaves of some out-house or shed.

Upon referring to my note-book I see that on the 17th October, 1860, while riding along a watercourse near the Lachlan River, we came across a batch of about two hundred and fifty nests of this species, built closely together under the bank of the watercourse. The birds had not far to go for the mud they used, as there was a little pool of water just below their nests. When they had got as much as they needed in their bills, they took two or three sweeps backwards and forwards before flying to the nests. Several birds were helping to build one nest. Sometimes two or three would come with their bills full of mud to add to the same nest.

10. GYMNORHINA TIBICEN (Gould, vol. ii. pl. 46).

None of the Australian birds I have hitherto met with lay eggs that are subject to greater variety than the present species does. Out of twenty specimens now before me, there are twelve very distinctly marked varieties; and I will endeavour to describe those of them which are from the neighbourhood of Sydney.

Var. α. In this, which is perhaps the most common variety, the ground-colour is of a very pale sky-blue or bluish white, with spots of lilac and numerous irregular markings of light brown equally distributed over the whole surface of the egg. Length, from 16 to 20 lines; breadth, from 13 to 15 lines.

Var. β. Ground-colour pale bluish or greenish white, with long curved markings, smears, and dashes of reddish brown. Length, 18 lines; breadth, 13 lines.

Var. γ. When first emptied of the contents, the ground-colour of this variety is a beautiful light green, with deep rust-red blotches over the whole surface, but run together so as to form one large patch on the thicker end. Length, 19 lines; breadth, 15 lines. This variety is usually seen in a very long egg.

Var. δ. Ground-colour bright light green or sky-blue when first taken, but fading when kept, having irregular markings of light wood-brown very sparingly dispersed over the whole surface. Length, 18 lines; breadth, 14 lines.

Var. ε. Ground-colour very pale sky-blue, with distinct oval spots of reddish brown and obsolete spots of lilac. In some specimens the spots are of a dark deep lilac, having a penumbra. Length, from 18 to 20 lines; breadth, from 13 to 15 lines.

Var. ζ. The ground-colour a uniform dull dark brown, with numerous minute dots and spots of a deeper hue over the whole surface. Length, 20 lines; breadth, 13 lines.

Var. η. Ground-colour brownish-white, with spots and dashes of wood-brown tinged with lilac, and obsolete lilac spots at the larger end. Length, 17 lines; breadth 14 lines.

The nest of the Australian Magpie is a large open structure, composed of sticks and twigs, lined with grass and hair. It is usually placed in the fork of a tree, or among the bushy boughs of a species of *Angophora*. The eggs are usually three, but sometimes four in number.

These lively and showy birds are great favourites among all school-boys, soon becoming tame enough to be allowed to run and fly about at pleasure, and coming down when called to receive a worm or a piece of meat from the hand. They are great mimics, especially of the larger birds and domestic fowls; but their own song is very pleasant and full of melody. It may be often heard at sunrise, as they leave the tall trees with sweeping flight, and make for the patches of cleared land, where they may be seen running over the bright green grass or searching for worms in the newly-ploughed fields, every now and then throwing back their heads and pouring forth their liquid flute-like notes. Young birds get their full livery after the first year.

11. MYIAGRA PLUMBEA (Gould, vol. ii. pl. 89).

This pretty Flycatcher arrives here about the same time as *Monarcha carinata*, or perhaps a little earlier. It is, however, much more regular in its visits than that bird, coming every year, whereas the other is not so regular, nor in such constant numbers. *Myiagra plumbea* is a pleasing, active little bird, ever on the move, and, even when perched, continues to pour out its guttural squeaking note, which is always accompanied by a tremulous motion of the wings, as if it were always anxious to be off again. It has another melancholy but pleasing note, which, when heard far off in the bush, is never to be forgotten, and at once warns you of its return. Although it is not so numerous during the months of November and December as when it first arrives in September, still many remain and breed with us, pairing off and beginning to build sometimes as early as October, but more usually during the two following months. They then leave the closely wooded sides of the creeks and water-courses, and show a decided preference to the more open or half-cleared land, choosing as sites for their nests the horizontal boughs of the larger trees, upon which they build neat round open nests, two inches in diameter by one and a half deep, and composed of stringy-bark (the bark of a *Eucalyptus*), bound and fastened together with cobwebs, the outside being ornamented with scales of bark, glued on with cobwebs, and made to resemble, as much as possible, the boughs to which they are fastened. They are lined with grass and thin strips of bark. The eggs, which are from two to three in number, have the ground-colour bluish white, and a zone of slate-blue and lilac dots near the larger end. In some the markings are of a wood-brown tint, or consist of lilac spots alone, with a dot of deeper tint in the centre of each spot. Their length is from 8 to 8½ lines, and the breadth from 6 to 7 lines.

This species remains with us until about March. I have not noticed any later.

12. MONARCHA CARINATA (Gould, vol. ii. pl. 95).

I have never myself had the pleasure of finding the nest of this beautiful species; but perhaps the fact that very few breed about Sydney may be a sufficient excuse for this seeming neglect.

For the nest and eggs which at present grace my collection I am indebted to Mr. George Masters, of Petersham, who procured them during a visit to Kiama in January 1864.

The only instance I know of this bird's breeding in the vicinity of Sydney was in December 1860, when I observed a pair, accompanied by two young ones scarcely able to fly. The first specimen I obtained last year was during September—about the 25th. Mr. Masters had also shot some a few days before at Petersham, about three miles distant from Sydney. They seldom remain long, but disappear as miraculously as they come, only a few remaining to pair and breed.

The nest procured by Mr. Masters was placed between the upright forks of a small tree, about eight feet from the ground. It is a neat structure, cup-shaped, and open above, composed of grass and fine rootlets closely interwoven; the outside is ornamented with green moss, *Hypnum*, &c., which give it a very beautiful and pleasing appearance. It is four inches in length by three across, and about an inch and a half deep inside. The eggs are two in number, their ground-colour pinkish-white, with numerous bright red or pinkish salmon-coloured spots and markings sprinkled all over the surface, but more numerously towards the thicker end. They measure 10 lines in length by 8 in breadth.

In this bird the plumage of both sexes is alike. I can discover no difference whatever.

13. Corvus coronoides (Gould, vol. iv. pl. 18).

In New South Wales we have two distinct races, if not species, of *Corvus*, known by the names of the White-eyed and the Black-eyed Crow. Both of them are equally plentiful about Sydney, indeed throughout the whole country, so far as I have visited it; but in some places the Black-eyed birds, and in others the White-eyed ones, prevail.

The birds with the white irides seem to be larger, and have the bill, if anything, longer and stouter than the other race. Mr. F. G. Waterhouse, of Adelaide, informs me that the young of the first have the irides white also; the young of the second have the irides black. The eggs of the White-eyed Crows differ from those of the Black-eyed race in being more lengthened and of a lighter green. They are not so bright in colour, nor are the markings (which have more brown in them) so distinct. Their length is about 21 lines, their breadth from 13 to 14 lines.

The eggs of the Black-eyed Crows are of a bright green, strongly blotched with deep black and brown markings, with a tinge of yellowish wood-brown in some places. They are from 19½ to 21 lines in length by 14 or 15 lines in breadth.

The nests of both races are alike—large bulky structures of sticks and twigs, some often half an inch thick. These form the groundwork of the nest, which is usually placed in the most inaccessible trees. Finer materials are used for the inner parts, and it is lastly lined with grasses, stringy-bark, and tufts of hair from various dead animals. The eggs are four or five in number. Both races are found over the whole of Australia; but, as I have above stated with respect to New South Wales, in some places one or the other predominates. In South Australia the White-eyed bird seems to be most common, whereas about Sydney both are equally plentiful. During the breeding-season they are chiefly found in pairs; but throughout the greater part of the year they assemble in large flocks of from fifty to several hundreds, and are most abundant near the slaughter-houses and "boiling-down" establishments. They also visit the fowl-houses and yards in search of eggs or any refuse that may be thrown out. During the breeding-season they have a great antipathy to Hawks; and should one of these birds come in sight, the angry pair will immediately pursue the intruder, and never desist from their efforts until they have driven him away. They usually have two broods a year, beginning to breed in August, and continuing until November, or even later in some instances, according to the locality.

Crows may be often seen in company with Gulls (*Xema jamesoni*), feeding upon the small fry left by the fishermen after drawing their nets on the low sandy parts of the beach. They have a peculiar waddling gait, and when walking appear very clumsy. Their native name is "Warga."

14. MYZOMELA SANGUINOLENTA (Gould, vol. iv. pl. 63).

This is one of the most beautiful of our Australian Honey-eaters. It is strictly a migratory species, arriving here during July and August, and leaving us again in January. Sometimes it is to be found in great numbers, at others very few come about us. In 1863 we were not favoured (so far as I am aware) by a single specimen, nor have I observed any at present during this season (1864).

When they have arrived, their presence is usually indicated by their pleasing liquid notes, among the tops of the mahogany and other trees which are in full bloom during these months. They are often accompanied by various species of *Trichoglossus*, chiefly *T. concinnus* and the more beautiful *T. swainsoni*, with occasionally a few of *T. chlorolepidotus*. The "Blood-bird," under which name *Myzomela sanguinolenta* is generally known here, breeds during the months of October, November, and December, making a neat but somewhat scanty nest of stringy-bark, seldom with any other lining. It is suspended between a fork or twigs at the end of some bough in the bush, or among the upright and topmost branches of the tea-tree.

The nest is perhaps smaller than that of any other Australian bird, being in some instances scarcely one inch and a half in diameter by one inch in depth. The eggs are two, seldom three, in number, of a delicate white strongly marked with reddish- and yellowish-brown spots, more numerous at the larger end. They are from 6 to 7 lines in length, and from 5 to 6 lines in breadth.

PARRA GALLINACEA (Gould, Birds of Australia, vol. vi. p. 75).

There has been so much left unsaid with respect to the nidification of the birds in the immediate neighbourhood of Sydney, that I feel I may be going out of my way in describing the eggs of the species from other parts of the country; yet the novelty and the beauty of these at present under consideration will, I hope, in some manner atone for my error*. For the first eggs of this beautiful *Parra* which I possessed I was indebted to Mr. Edward Hill, of Woolarla, near Sydney, who very kindly presented me with a pair which he stated were procured by a friend of his, living a few miles north of Rockhampton. Since then, however, I have obtained specimens from Messrs. Macgillivray and Wilcox from the Clarence River, procured, I believe, from a nest found in a lagoon in the neighbourhood of Grafton.

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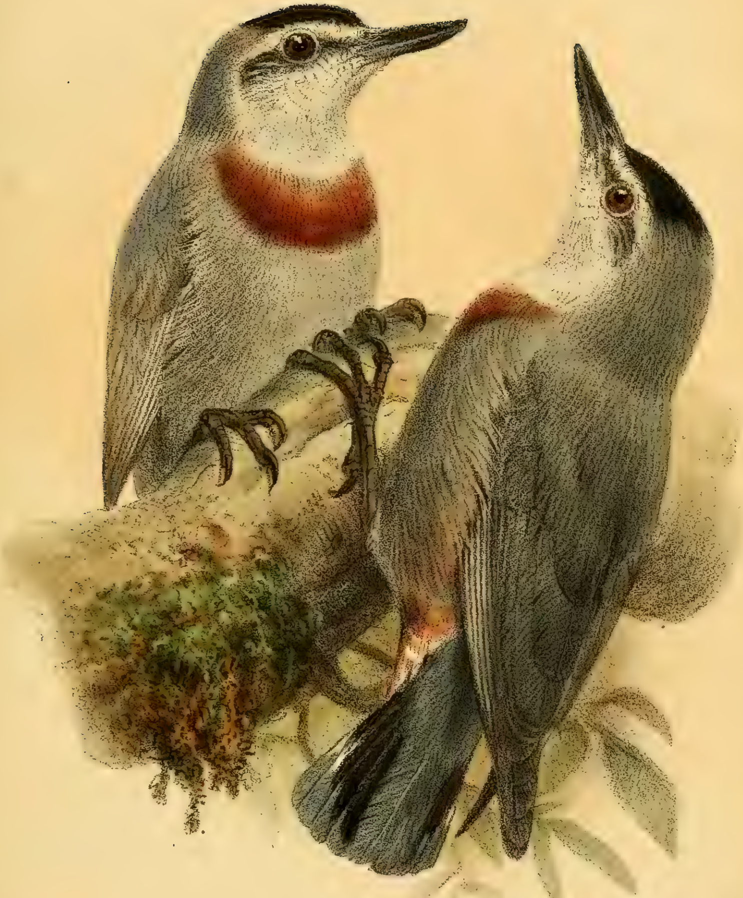
* [The eggs of *Parra gallinacea* have recently been described by Mr. Gould (P. Z. S., 1864, p. 661) from two examples which may very possibly have been out of the same nest as the first mentioned by Mr. Ramsay. —ED.]

Mr. Gould, in his magnificent work on our Australian birds, having given us beautiful figures of the nest and young, as well as of the adult birds, it will be useless for me to redescribe them here. I shall therefore not take up time by going over old ground, but proceed at once to say what the eggs are like. They vary in form from being quite oval and pointed equally at both ends, to almost round or pyriform as in some of the Plovers. When of this last shape, they are usually placed in the nest with their small ends pointing inwards. In length they are from 13½ to 14½ lines, and in breadth from 10 to 11 lines. The ground-colour is a light yellow olive, becoming with time much darker. The whole surface is crossed and recrossed with irregularly curved and rather broad black lines, turning and twisting in every direction, and, in some examples, with shorter lines, making various ill-shapen letters or figures, while in others these markings take the form of blotches. Appearing beneath the shell are deep yellowish-brown streaks and hair-lines recrossing them on the surface. Some specimens are more numerously streaked than others, and have the broader black lines predominating; in others the fine hair-lines and those of yellowish brown are most visible. The eggs are four in number; and the nest, which is composed of sedge, grass, and aquatic plants, is placed close to the water's edge, or upon any bunches of weeds or grass growing in the water, which may be sufficiently strong to bear its weight.

XXVII.—*Notes on Krüper's Nuthatch and on the other known Species of the genus* Sitta. By P. L. Sclater, F.R.S., &c.

(Plate VII.)

Dr. Hartlaub having kindly forwarded for my examination a pair of the newly discovered Nuthatch of Asia Minor (lately described by Herr von Pelzeln of Vienna, as noted in the last



J. Wolf. del. et lith.

M. & N. Hanhart imp.

SITTA KRUEPERI.

volume of the 'Ibis'*), belonging to the Bremen Museum, I have gladly acceded to our Editor's request to have a figure of this very interesting species prepared by Mr. Wolf, and to write a few notes on the subject.

Herr von Pelzeln having given an excellent description of *Sitta krueperi* in his article on the subject, in the 'Sitzungsberichte' of the Imperial Academy of Sciences of Vienna, I confine myself to a diagnosis containing the more noticeable characters.

SITTA KRUEPERI, v. Pelzeln. (Pl. VII.)

♂. Plumbea; pileo postice rotundato nigro; superciliis et gula tota albis; torque pectorali lata castanea; abdomine dilute cinereo; crisso castaneo mixto; rectricibus nigris, harum autem duabus mediis et ceterarum apicibus plumbeis. Long. tota 3·5, alæ 2·8, caudæ 1·5, rostri a rictu ·75, tarsi 0·7 poll. Angl. et dec.

♀. Mari similis sed coloribus dilutioribus; pileo nigro minus extenso et torque pectorali non bene definita.

Hab. Asia Minor, prope Smyrna (*Krüper*).

Mus. Vindob. et Bremensi.

There is no known species of the genus *Sitta* that resembles *S. krueperi* in colouring sufficiently nearly to be confounded with it. Its distinct black cap rounded behind, its broad chestnut pectoral band, and its small size separate it at once from all other Old-World species of the group. In size it is about equal to *S. pygmæa* of California and Mexico, but does not otherwise resemble any one of the known American species.

The appearance of this new and marked form so near the confines of Europe as Smyrna is a fact of great interest, particularly when taken in connexion with the discovery of the Titmouse recently described by Dr. Günther from the same neighbourhood (*suprà*, p. 95). It shows us that the fauna of Asia Minor is by no means so fully worked out as has been supposed, and that novelties of the most attractive character still await the researches of the naturalist at a very short distance from the civilization of Europe, and in a country where access is easy and travelling secure.

The birds from which Mr. Wolf's figures (Plate VII.) are taken, were obtained by Dr. Krüper in the months of April and June 1864, near Smyrna.

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* Ibis, 1864, p. 402.

I take the opportunity of adding a few notes on the other known species of the genus.

The Old-World or Palæogean species of *Sitta* are nearly confined to the Palæarctic Region; one species only being found within the Indian Region. They number eight species, which may be divided into the following sections:—

1. The large isolated *Sitta formosa.*

2. The middle-sized species allied to *S. europæa,* all of which are plumbeous above, have a black line through the eye. Of this group we know five—namely, *S. syriaca, S. europæa, S. himalayensis, S. cinnamomeiventris,* and *S. castaneiventris.*

3. The little *Sitta krueperi,* which stands quite alone.

4. *Sitta leucopsis* of the Himalayas, which is most nearly allied to *S. carolinensis* of North America.

The New-World or Neogean members of the group are four in number, all very easily distinguishable if we treat *S. aculeata* as a local form of *S. carolinensis.*

I add a few remarks, chiefly relating to the geographical distribution of these twelve species.

1. *Sitta formosa,* Blyth: Gould, B. Asia, part i. pl. 6.

This fine species is readily known by its large size and brilliant colouring, being of a fine cobalt-blue above, and thus distinct from the other known species of *Sitta,* which are all of some shade of plumbeous on the back. It somewhat reminds one of the allied genus *Dendrophila.* According to Dr. Jerdon (B. India, i. p. 387), it has hitherto only been met with in Sikim, at an elevation of from 7,000 to 8,000 feet.

2. *Sitta syriaca,* Ehrenb.

This fine large species, although as regards its coloration appertaining to the typical group, differs in habit and slightly in structure, being entirely a rock-climbing species. It extends from Dalmatia and Epirus (where it is common *) over the Grecian peninsula and Asia Minor † into Palestine, where specimens were recently obtained by Mr. Tristram ‡.

Examples collected in Candahar and in the Bolan pass,

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* Lord Lilford in 'Ibis,' 1860, p. 232.

† Neighbourhood of Smyrna (Gonzenbach).

‡ P. Z. S. 1864, p. 433.

Afghanistan, by Mr. William Griffith, during the government expedition to those countries, do not materially differ from the European bird, so that we may conclude that it inhabits all the intermediate region of Western Asia.

3. *Sitta europæa*, Linn.

This well-known species, under its two forms, *uralensis* (sive *sibirica*) and *cæsia*, seems to be distributed nearly all over the northern portion of the Palæarctic Region, except the Himalayas. Dr. Blasius has written an excellent article on the subject of its variations in 'Naumannia' for 1856 (p. 433), which should be studied by those who still hold out for the specific distinctness of the white and rufous-breasted forms.

In Middle and Southern Europe (including the British Islands) *Sitta cæsia* is the predominant form. In middle and northern Germany, in Denmark, and in many provinces of Russia, an intermediate stage occurs, which Brehm calls *Sitta advena*. In Scandinavia, northern Russia, and throughout Siberia, *Sitta uralensis* is the usual form, although Von Schrenck has shown that *S. cæsia* and intermediate varieties also occur in southern Amoorland. In Japan *Sitta uralensis* is found in the northern islands of Yesso *, and possibly *S. cæsia* in the southern islands †.

In Mr. Tristram's recent article on the "Birds of Palestine" (P. Z. S. 1864, p. 433), he has introduced what appears to me to be scarcely more than a slight variety of the *Sitta europæa*, var. *cæsia*, under the name *Sitta krueperi*. The under-surface of the Palestine bird is of a deeper rufous than in ordinary European specimens, but is hardly otherwise different. *Sitta europæa*, var. *cæsia*, likewise occurs in Algeria ‡.

4. *Sitta himalayensis*, Jard. & Selb.: Gould, B. Asia, pt. i. pl. 10.

This is the Himalayan form of *Sitta europæa*, from which it may be distinguished by the distinct white spot near the base of the two central rectrices. In *S. europæa* the two central rectrices are uniform plumbeous, like the back. *Sitta himalayensis* is found on the southern slopes of the Himalayas, being numerous in Sikim and about Darjeeling. It also occurs in Nepal (*Hodgson*); Bootan (*Pemberton*); and Kumaon (*Strachey*).

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* See Cassin, Proc. Acad. Sc. Phil. 1858, p. 195. Çapt. Blakiston calls this species "*S. roseilia*, Bp.", in his interesting article in 'Ibis,' 1862, p. 322.

† Cf. Von Schrenck, Amoorland, i. p. 314.

‡ Cf. Loche, Cat. p. 77.

5. *Sitta castaneiventris,* Franklin: Gould, B. Asia, pt. i. pl. 8.

This Nuthatch, distinguishable by the deep chestnut colouring of the breast in the male bird, is the only species of the genus found in the peninsula of India. According to Dr. Jerdon it occurs in nearly all the jungles of Southern and Central India, being most common near Nagpore, in the Vindhyan range, in Bundelkund, in Goomsoor, and in the Northern Circars.

6. *Sitta cinnamomeiventris,* Blyth: Gould, B. Asia, pt. i. pl. 7.

This Nuthatch is a close ally of the last species, but smaller in dimensions, and with the "bill broader and not so much compressed." Dr. Jerdon obtained specimens of it in Sikim. Specimens were collected by Pemberton in Bootan, and by Hodgson in Nepal.

7. *Sitta krueperi,* v. Pelzeln.

This bird, as far as we hitherto know, is only found in Asia Minor, near Smyrna, Mr. Tristram's *Sitta krueperi* of Palestine (P. Z. S. 1864, p. 433) being, as we have already stated, hardly different from *Sitta europæa,* var. *cæsia.*

8. *Sitta leucopsis,* Gould, B. Asia, pt. i. pl. 9.

This well-marked species belongs to the same group as *Sitta carolinensis,* and is readily distinguishable from every other Asiatic species by its black head and nape. In *Sitta krueperi* the nape is grey, like the back.

Major W. E. Hay's specimens of this species, from which, we believe, Mr. Gould's figures were taken, were obtained in the Mahasoo forest, near Simla, at an elevation of 8,000 feet.

9. *Sitta carolinensis,* Lath.

This well-known species seems to be generally distributed over the North-American continent, from New Brunswick on the east coast and Washington Territory on the west, down to the isthmus of Tehuantepec. Mr. Cassin has separated the western form as *Sitta aculeata* *; but Prof. Baird states that its "only appreciable difference" is the "much slenderer bill." I have no eastern examples in my collection, but I have Mexican skins from Jalapa and Oaxaca. These have the bill decidedly shorter and perhaps a trifle stouter than a Californian skin kindly furnished to me by Prof. Baird, but do not quite agree with one another, the Oaxacan bird having the shortest of the two. Prof. Baird says that specimens from Washington Territory are also intermediate.

10. *Sitta canadensis*, Linn.

This little species, which, except in size and its black head, reminds us of the group of *Sitta europæa*, has also a wide range, but does not go nearly so far south as the last, not apparently reaching Mexico, or even Texas. It seems, on the other hand, to wander very far north; for a specimen in the British Museum is marked as having been obtained by Dr. Rae in Repulse Bay, on the south side of Melville Peninsula, lat. 66° N. *Sitta canadensis* is common in Canada and all across the Rocky Mountains to British Columbia, numerous specimens having been obtained by Mr. Lord during the "Boundary" Survey. Prof. Baird registers specimens from various parts of California.

11. *Sitta pusilla*, Lath.

This little species appears to be confined to the southern Atlantic States of North America,—South Carolina and Georgia being its head-quarters.

12. *Sitta pygmæa*, Vigors.

Sitta pygmæa represents the last species on the western coast, where it ranges as far north as Washington Territory. Descending southwards it gradually extends eastwards, as is the case with many other Californian species, and pervades the table-land of Mexico. I have never had an opportunity of comparing my example from Xalapa (collected by De Oca) with north-western specimens, but I have little doubt as to their identity.

* Proc. Acad. Phil. 1856, p. 254.

XXVIII.—*Notes on the Birds of Southern Texas.*

By H. E. Dresser.

In offering the following notes on the birds observed in Southern Texas and the country adjacent to the Rio Grande of Mexico, it may probably be as well to preface them with the following particulars as to my own movements. I arrived at Matamoras, Mexico, on the 26th June, 1863, under rather unfavourable auspices, having been upset crossing the bar of the river, losing everything excepting my gun, pistol, and some articles of value, which I carried on my person. The loss of my clothes did not trouble me much; but the loss of my papers, books, and particularly of my 'American Ornithology,' was very annoying, as I did not know much about the birds of the Southern States and Mexico, and I was fully aware that ornithology would be the only amusement I should find during my stay. I remained at Matamoras from the day mentioned until the first week in September, and spent all my spare time shooting and skinning birds. The country near the town is barren-looking, being low, sandy, and overgrown with *Cacti* and Algaroba (Mezquite) bushes, with very few trees of any size. At one end of the town is a good-sized lagoon or pond, formerly the main bed of the river, beyond which are some fair-sized trees and a field, and beyond that again the Rio Grande. This and a grove some two miles up the river proved the best places for collecting, and many were the birds I shot there. I found the season too far advanced for eggs, nor did I obtain any but those of the Mocking-bird (*Mimus polyglottus*). At first I did not meet with a great variety of species; but those which I did procure were, I suppose, all breeding near there. At the town-lagoon *Agelæus phœniceus, Quiscalus macrurus, Scolecophagus cyanocephalus, Grus americanus, Florida cærulea, Ægialites vociferus, Recurvirostra americana, Himantopus nigricollis, Symphemia semipalmata, Fulica americana, Sterna frenata, Hydrochelidon plumbea, Rhynchops nigra,* and occasionally *Dendrocygna autumnalis* were found; and near the river, wherever there were trees and bushes, and in the "chaparral," *Cathartes aura, C. atratus, Coccyzus americanus, Geococcyx californianus, Chordiles popetue, C. henryi,* and *C. texensis, Milvulus forficatus,* *Tyrannus couchi* or *melancholicus,* a great variety of the small green Flycatchers (*Vireo*), *Dendrœca æstiva, Cotyle riparia, Hirundo lunifrons, Progne purpurea, Mimus polyglottus, Harporhynchus curvirostris, Guiraca cærulea, Cyanospiza ciris, Cardinalis virginianus, Icterus baltimore, Columba flavirostris, Melopelia leucoptera, Chamæpelia passerina, Ortalida maccalli, Ortyx texanus,* &c. &c. In the grove up the river *Tyrannus couchi, Milvulus forficatus,* and other Flycatchers were breeding abundantly, but all had young. All three species of Night-Hawks were common, and in the dusk of the evening came flying towards the river, literally by thousands.

Towards the middle of August the birds of passage began to appear, and the town-lagoon swarmed with Herons and Waders of all sorts; indeed I shot thirteen White Herons (*Garzetta candidissima*) at one discharge. The Mexicans seldom take the trouble of going out shooting; and there being so few English there, I had it almost entirely to myself, and spent an hour or two at the lagoon every day. I generally turned out at four o'clock in the morning, and thus had four or five hours outside the town before breakfast. Amongst the birds occurring at the lagoon I may name the Stilt-Sandpiper (*Micropalama himantopus*), which I often got when making a "pot-hunting" shot into a flock of Brown Snipes (*Macrorhamphus griseus*); indeed I could have shot eight or ten daily, as I rarely saw a flock of these Snipes without three or four Stilt-Sandpipers being with them. The Buff-breasted Sandpipers (*Tryngites rufescens*) appeared late in August, and were generally found on some grass near the lagoon, and not consorting with the other Sandpipers. Wilson's and the Semipalmated Sandpipers (*Tringa wilsoni* and *Ereunetes petrificatus*) were very common. A few Godwits (*Limosa fedoa*) and Curlews (*Numenius longirostris* and *N. hudsonicus*) also frequented the lagoon, and two species of Ibis (*Ibis alba* and *I. ordii*) were very common. Several flocks of Spoonbills (*Platalea ajaja*) also showed themselves, and I shot four or five at different times. Hawks and Woodpeckers seemed to be the rarest birds at Matamoras; indeed I only noticed one species of each (*Craxirex unicinctus* and *Picus scalaris*) during the whole time I was there.

I went twice to the Boca Grande (now the town of Cortinas, but then a few miserable huts, dignified by the name of Bagdad), and shot a few birds there, getting, however, nothing of any note. Laughing Gulls, Pelicans, Terns, and Skimmers were common; but of the Waders I did not notice many. I was told of a large saltwater lagoon to the southward of Bagdad, where lots of birds bred, and among them, according to the statements of the Mexicans, the following:—*Grus americanus, Recurvirostra americana, Himantopus nigricollis,* and *Hydrochelidon plumbea.* I was, however, unable to spare the time to visit it; nor indeed would it have been of much use, as the egg-season was far past. I was told by the Mexicans that some Hawks had been seen at the Boca del Rio Grande; but, for myself, I never noticed a Hawk of any description, excepting, as I have said, *Craxirex unicinctus.*

Before starting for San Antonio, I packed up the skins I had prepared (more than fifty in number), a few insects, and some skins of mammals, and left them; but on my return, in 1864, I found all lost or destroyed, except about half a dozen birds, which, however, had the legs and bills destroyed by ants.

Early in September I started, with one companion, from Brownsville to San Antonio, calling at San Patricio and Victoria. We camped out the whole way, trusting chiefly to my gun for subsistence; and I am glad to say that the supply was seldom less than the demand. The country we passed through, the first two days of our journey, was covered with chaparral, excepting here and there, where small prairies intervened; and we found pretty fair grazing for our horses. I found lots of Bush-rabbits, Hares, White-winged and Carolina-Doves (*Melopelia leucoptera* and *Zenaidura carolinensis*), a few Curlews (*Numenius longirostris*), and Bartram's Sandpiper or Field-Plover (*Actiturus bartramius*); so we did not starve.

We were two days passing through the sand-plains, a most miserable region, inhabited by nothing but Hares, Curlews, and Antelopes, and not a tree or bush to give shelter from the scorching sun. Arrived on the other side, we took it coolly, to allow our horses to regain their strength (as the sand was up to the hubs the whole way); and I spent the whole time hunting, and was able to spare enough for several parties camping near us. I found the Field-Plover very common and excellent eating; indeed we did not willingly eat anything else so long as we could get them. The Buff-breasts (*Tryngites rufescens*) were common, and also proved good eating; only they were too small. They were found in small flocks by the roadside and in grassy places, and in their habits reminded me much of the Kentish Plover (*Ægialites cantianus*). Near Barton's Rancho I noticed several Ducks and a Phalarope (probably *Phalaropus wilsoni*) on a pond; and at a clump of trees near it several Hawks, amongst which I could distinguish *Buteo borealis* and *B. pennsylvanicus*. From here to Victoria the country was very beautiful, with the exception of a few portions from Barton's Rancho to the Nueces, and the avifauna seemed changed to a large extent. Shrikes (*Collyrio ludovicianus*), Woodpeckers, and Hawks were abundant; and I was able to add lots of Quail (*Ortyx texanus*) and a few Prairie-hens (*Cupidonia cupido*) to our bill-of-fare. At first Curlews were very abundant, and not difficult to approach; but the further east we travelled, the fewer we noticed. Sandhill-Cranes (*Grus canadensis*) were also not uncommon; and I am pretty sure that I saw several little Cranes (*G. fraterculus*).

We remained several days at Victoria, and then started off to York Town, and from there to San Antonio. We spent our last night at Sulphur Springs; and the host there (Sutherland), a keen hunter, showed me two fine heads of the Virginian Deer, which had the horns locked together so that they could not be disengaged without breaking them. He had found the deer dead, and partly decomposed. As he did not seem to value them much, I offered him a box of Eley's caps for them, which he eagerly accepted. I afterwards sent them to Brownsville, where they were eventually lost.

At San Antonio I settled down for the time being, and subsequently made that place my head-quarters until I finally left the country in July 1864.

I was fortunate in finding Dr. A. L. Heermann at San Antonio, and arranged to live in the same house with him. This was a great advantage to me, as often, when obliged to leave birds half skinned to attend to business, he would kindly finish them for me; and besides that, he had a thorough knowledge of the adjacent country. Of his reputation as an ornithologist and oologist I need say nothing, as his name will be well known to most naturalists. I had, before leaving England, heard of his death, and therefore was both surprised and gratified to find him alive and comparatively speaking in good health.

I set to work hard at San Antonio, but found time to make many excursions to the Medina and Attascosa Rivers, the Bandera Hills, and the like, in which Dr. Heermann was, owing to his infirmity, unable to join. In November I spent a week deer-hunting in the Bandera range, in company with a couple of old Texan hunters, and had first-rate sport. I intended remaining out ten or eleven days, but on the eighth day of our trip I was recalled by business to San Antonio. Here I first saw Massena's Quail (*Cyrtonyx massena*), and was even able to make a meal of these rare birds (preserving the skins, however, for myself), besides obtaining many additions to my collection. Of the Hawks, *Falco polyagrus, Hypotriorchis columbarius, Accipiter cooperi, Buteo borealis, B. elegans, B. pennsylvanicus, Polyborus tharus,* and *Craxirex unicinctus* were pretty common. I saw several Barred Owls (*Syrnium nebulosum*), and shot a couple of Prairie-Owls (*Athene hypogæa*) and one Scops (*Scops maccalli*?). Blue-birds (*Sialia arctica* and *S. sialis*) were very abundant; and I saw not a few Buntings (*Pipilo arcticus, Zonotrichia gambeli, Calamospiza bicolor*) and other small birds. Wild Turkeys (*Meleagris gallopavo*) were especially abundant; but having so much venison in camp that it was spoiling, we abstained from shooting many, and were just on the point of starting on a Turkey-hunt, in order to supply our friends in town, when the Mexican messenger arrived to recall me. We had, however, eight hind quarters of deer and a couple of Turkeys in stock, so did not return quite empty-handed.

In December I made a short trip to the Upper Rio Grande, remaining a few days at Eagle Pass and Piedras Negras, and returning to spend Christmas in San Antonio. As before, I drove my own horses, camping out on the road; and as I travelled slowly and carried little weight, I was able to skin and carry with me a few birds. As on the lower road, I noticed the difference in the birds between the Nueces and Rio Grande, and the Nueces and San Antonio. On the San Antonio side, the Texan Quail (*Ortyx texanus*) and Cardinal (*Cardinalis virginianus*) were amongst the commoner birds, whereas past the Nueces I only noticed the Texan Cardinal (*Pyrrhuloxia sinuata*) and Blue Quail (*Callipepla squamata*). Nor did I see any *Quiscalus macrurus* before arriving at the Nueces. Amongst the birds observed on the way I may name *Falco polyagrus, Hypotriorchis columbarius, Accipiter cooperi, A. fuscus, Buteo elegans, Craxirex unicinctus, Sayornis sayus, Sialia arctica, Pipilo arcticus, Ægialites montanus,* and *Fulix collaris.*

I made a second trip to Eagle Pass on the 29th of January, 1864, remaining there until the 21st of March. At first I could find no place to live at, every mud hut being filled; but on the second day Captain Weyman kindly offered me the Powder-house at Fort Duncan, which I and an English friend soon transformed into pretty fair bachelor-quarters. I had very little to do, and was generally out with my gun; but game was very scarce. The town (if thirty to forty mud huts can be so called) is on the banks of the river, and the adjacent country is merely a sand plain overgrown with thorn-bushes and *Cacti,* with a few hillocks in the distance. I rode to some of the streams higher up the river, where the country was more wooded and fertile-looking; but, owing to the unsafe state of the frontier, one cannot go far unless accompanied by a few well-armed companions. The commonest birds near the town were *Callipepla squamata, Harporhynchus curvirostris, Oreoscoptes montanus, Poospiza bilineata, Campylorhynchus brunneicapillus, Falco polyagrus, Hypotriorchis columbarius,* and *Pyrrhuloxia sinuata,* which latter bird I often noticed in cages, and was told by the Mexicans that a great number of their nests are to be found at the proper season near the town. I also shot a couple of fine specimens of *Phænopepla nitens.*

On my return to San Antonio, Westfall, the frontier-man, met me at the Leona, and wanted me to take a hunt with him; but finding it would take up too much time, I was compelled, most unwillingly, to refuse. I drove, however, off the road at the Blanco, and spent three days hunting there and on the Savonal, in company with three others, getting Deer, Turkeys, Peccaries, and plenty of wild honey, but no additions to my collection, excepting a specimen of *Polioptila cærulea,* which I found very abundant.

At San Antonio I stayed some time, and hoped to have remained there during the breeding-season; but, unfortunately, I had to visit Houston on business, and, availing myself of an offer from Governor Vidaurri and Colonel Dickinson (who were on their way to Houston, the former having been driven from Mexico by Juarez) to join them, I started for that town on the 15th of May. We had to pass through Austin, as the Governor had some business there, which rather lengthened our journey; but as we traversed a lovely country, and had everything we could want with us, I, for one, was not dissatified with the delay. We travelled slowly, and I had lots of time to shoot and nest, and succeeded in getting a few eggs, amongst others those of *Chondestes grammica* and *Zenaidura carolinensis.* On arriving at the Colorado, at Bastrop we found Swallow-tailed Kites very common, and Mississippi-Kites almost equally so. Of the former I once saw between forty and fifty at one time. I should much have liked to have remained a week at some plantation on the road, and have taken the eggs of these birds with my own hands, but, much to my disgust, was unable to do so; for, on my arrival at Houston, I found that I should have to spend at least a week in idleness before settling some business I had there. I determined not to remain in the town, as I could get no shooting or egging near it, so started immediately for Galveston, and stayed there until I was wanted. On my arrival there I found plenty of birds, but no chance of getting any eggs unless by taking a boat; and, owing to the strict blockade, none were allowed outside. General Hawes, however, kindly gave me the use of a boat, with leave to go where I chose, and, furthermore, a pass permitting me to shoot anywhere and to enter any of the fortifications with which the island is studded. I therefore spent much time shooting on the island, and occupied three days (from the 1st to the 3rd of June) outside, with a pilot, on an egging expedition. We had, unluckily, a very small boat, and could not go very far, which was unfortunate, as I was told that I should find the eggs of the Stilt and Avocet on an island some distance along the coast. We went along West Bay, and, having a head-wind, it took us nearly all day to get to the islands towards the end of the bay. We examined several, but obtained nothing excepting a couple of eggs of the Least Tern (*Sterna frenata*), which I found just above the drift-stuff in a slight depression in the sand. Pelicans were common, but had already hatched; so we got no eggs. On the islands we noticed the following birds:—*Garzetta candidissima, Herodias egretta, Ardea herodias, Demiegretta ludoviciana, Ægialites vociferus, Strepsilas interpres, Recurvirostra americana, Himantopus nigricollis, Symphemia semipalmata, Plotus anhinga, Chroicocephalus atricilla, Sterna aranea, S. regia, S. wilsoni, S. frenata, Rhynchops nigra,* and *Sterna fuliginosa,* of which latter I only saw a couple. We drew up our boat on one of the small islands, and, collecting some drift-wood, soon had the kettle boiling over a roaring fire, and with a few fish we had caught, and some other food we had with us, made a good meal, and turned in for the night on the soft sand.

The next morning we were up bright and early, and commenced examining some of the islands, but found nothing but a few eggs of Wilson's Tern until the afternoon, when, seeing a flock of Gulls and Terns at some distance, Gifford told me we had a chance of getting something there. We sailed to where we saw the most birds collected (a small island off the main island); and on our landing, hundreds of birds rose up. I marked a Laughing Gull up, and, on going there, found a nest containing three eggs, and, further on, took four or five more nests and some eggs, which at first I could not identify; but later I marked a bird, and shot it. On examination it proved to be *Sterna aranea,* the Gull-billed or Marsh-Tern. After taking most of the eggs we found here, we proceeded to an island further on, where we noticed a few Egrets (*Garzetta candidissima*) and Louisiana Herons (*Demiegretta ludoviciana*), and on reaching the island they rose in such numbers as to fill the air above us. Here we had no lack of eggs, as we found at least from two to three hundred nests of *D. ludoviciana* at one end of the island. The nests, clumsily and heavily built of drift-sticks and grass, were placed on the low bushes or long grass, and contained three or four eggs (generally the latter number) of a light-blue colour. Near them and amongst them were a dozen or more Laughing Gulls' nests, some very slightly built of straws and drift-stuff, and others pretty well formed; indeed it looked much as if the Gulls had taken possession of Herons' nests in some cases.

Further on were a few nests of the Egrets; and at one end of the island we found a large colony of Wilson's Terns, but, finding many hatched out, we only took a few eggs, which were fresh. These Terns make a sort of nest on the large piles of drift-grass, and lay three or four eggs, much resembling those of our Common Terns (*Sterna fluviatilis*). We noticed several Spoonbills (*Platalea ajaja*) and a pair of Long-legged Ducks (*Dendrocygna fulva*), which I thought might have a nest near; but I was mistaken, for on shooting and examining one, the male, I found the testes but slightly developed.

On leaving this island we tried the main island, and found a large colony of *Larus atricilla* and *Sterna aranea*. This latter bird makes scarcely any nest, and indeed often merely scratches a hole in the sand. The nest, when there is one, is merely composed of a few straws round a hole scratched in the sand, and contains three or four eggs. Most of the eggs were slightly incubated; whereas those of the Laughing Gull were very fresh. Great quantities of Skimmers were about, but we found no eggs; indeed Gifford told me that they generally breed later in the season. We were tired, and therefore turned in early; and the next morning, after taking a few more eggs of the above-named species and a couple of nests of *Sterna frenata*, we returned to the town. As we had nearly two bushels of eggs with us, we feasted on them for several days at the hotel, and found them excellent eating, especially those of the Laughing Gull.

I made several trips along the island, and to a lake on it, at which latter place I saw a great quantity of *Dendrocygna fulva*, which a German, who shot birds for the market, told me breed here late in June. Wilson's Sandpipers and Wilson's Plover were also pretty common; also Willets, Curlew (*Numenius* *longirostris*), Blue, Great, and Snowy Herons, Spoonbills, Avocets, Stilts, Turnstones, and Killdeer Plover. Of the land-birds the island is very bare; but I found *Icterus spurius*, *Tyrannus carolinensis*, and *Quiscalus major* breeding there: the eggs, however, were all either incubated or hatched out. I found and shot some species of Marsh-Wren, but, not having brought any natural history-work from San Antonio with me, could not make sure as to which it was.

I went back to San Antonio about the middle of June, and remained there until the latter end of July, when I left to return to England.

Brownsville, owing to the war, being inaccessible, I had to go to Matamoras by way of Laredo, at which place I remained a couple of days, and was lucky enough to find some nests near the town—among them those of *Poospiza bilineata*, *Peucæa cassini*, and *Campylorhynchus brunneicapillus*, and near Roma one nest of *Harporhynchus curvirostris*, all containing eggs. Of the Black-throated Sparrow and Brown-headed Wren I found many nests on the journey, all, however, either containing young or else empty, the young having flown. The last-named bird has a peculiar predilection for placing its nest in the most exposed situations possible; and if a dead bush is to be found, one can generally see a nest stuck on the top of it: between two cactus-leaves is also a favourite place. The Black-throated Sparrow generally places its nest in the low bush, or in a bush by the roadside.

Matamoras I found much changed, it having grown into a large town; and as for collecting, "pot-hunters" had become so numerous that my favourite places, the lagoon and the groves up the river, were quite deserted; indeed I noticed nothing but a few Coots on the former. I found all the bird-skins I had sent from San Antonio, at different times, all safe; but a large box, containing all the larger eggs I had collected in Texas, and which I had despatched shortly before leaving San Antonio, was not forthcoming. This I have since heard of; but it has not yet been received, though I hope it may arrive. I therefore packed up, and having shipped the skins (about four hundred in number) to England, returned home by way of New Orleans and New York.

In the following list are some remarks bracketed and having the letters "A. L. H." appended. These are remarks made by Dr. Heermann in pencil in my note-book, which I cannot do better than put in his own words.

CATHARTES AURA (Linnæus). Turkey-Buzzard.

One of the commonest birds throughout the country, particularly about the roads on which cotton was being hauled to a shipping-port, being lured thither by the quantities of dead oxen and mules strewn all along. Breeds all through the country, where, on the banks of the streams, the timber grows sufficiently thick to afford a secure shelter. I never succeeded in taking any of its eggs, but was shown many nests on the banks of the Medina, Attascosa, and San Antonio rivers, and have had the eggs brought to me by the negroes and Mexican vaqueros. The nests I have seen were large, bulky, composed of sticks, and generally placed at some height on a cypress or an oak near the river-bank. In hunting after Turkeys on the roost by moonlight, I have often been deceived by these birds, which, in the uncertain light, much resemble them.

CATHARTES ATRATUS (Bartram). Black Vulture.

On the lower Rio Grande I found this bird about equally common with the preceding, but towards San Antonio much less common. They are generally found in company, attended also by *Polyborus tharus* and *Craxirex unicinctus*.

I had the eggs sent to me by a German from Systerdale, where they were found in a nest made on the ground amongst some rocks; and the sender told me that there these Vultures seemed to have it all to themselves, to the exclusion of the Red-headed Vultures. Dr. Heermann took the eggs on the Attascosa River. I have not the eggs here (they being, with most of my larger eggs, still *en route*); but, so far as I recollect, they differed only from those of the Turkey Buzzard in being somewhat smaller.

CATHARTES BURROVIANUS, Cassin. Mexican Vulture.

Dr. Heermann tells me that he noticed several of these birds at a rancho several leagues from Brownsville. I myself also noticed several small Vultures on the Palo Alto prairie, near Brownsville, but, not having my gun with me, could not procure one to make sure whether they belonged to this species.

Falco anatum, Bonaparte. Duck-Hawk.

Several of my friends at Matamoras, and also Mr. Pierce, the United States' Consul, described to me a Falcon found there during the winter, following the vast flocks of wild fowl, which can be no other than this. Several were shot, but they were unable to preserve a single skin; however, they gave me a pretty accurate description of the bird. At San Antonio, where I wintered, I saw none.

Falco columbarius, Linnæus. Pigeon-Hawk.

Common about Bexar and the adjoining counties during the whole year, and occasionally breeds near the Medina River. In December I saw several, when on a journey to Eagle Pass from San Antonio, and on my excursions in the neighbourhood of Eagle Pass.

Falco polyagrus, Cassin. Prairie-Falcon.

Common during the winter on the prairies near San Antonio, and still more common towards Bandera. A few remain to breed; but I did not succeed in procuring the eggs. In June, Dr. Heermann noticed one strike and carry off a young Turkey; therefore it probably had young ones near. In December, when at Eagle Pass, I found them common there.

Tinnunculus sparverius (Linnæus). American Kestrel.

This beautiful little Hawk I found quite common near San Antonio and to the eastward throughout the whole year. It breeds, I was told, in the neighbourhood of San Antonio, nesting in a hollow tree. To the westward of San Antonio I found them scarcer, and noticed none on the Rio Grande.

Accipiter cooperi, Bonaparte. Cooper's Sparrow-Hawk.

Not uncommon about San Antonio, where I procured several specimens. I also shot specimens in November on the Bandera hills, and in December at Eagle Pass. Breeds on the Attascosa and Medina. A lad procured me the eggs early in April at the former place, shooting the bird on the nest, but, with true Texan carelessness, broke them all in bringing them to San Antonio.

Accipiter fuscus (Gmelin). Sharp-shinned Hawk.

This bird came under my notice nowhere further south and west than San Antonio, at which place it is common, and where I shot several at different times. It remains near there during the breeding-season, and probably breeds in the dense cedar-thickets towards the hill-ranges.

Buteo swainsoni, Bonaparte. Swainson's Buzzard.

I procured one specimen in immature plumage between San Antonio and the Medina River, on the 9th of April 1864.

I was on my way to spend Sunday at Howard's Rancho; and noticing several dark-coloured Hawks at some distance from the path, I rode towards them to see what they were, and just succeeded in getting a snap-shot from the saddle at this bird. Unluckily I was mounted on a half-broken mustang, who, to judge from the capers he cut, had never before heard a gun discharged so close to him; and before I could get him sufficiently quieted down to allow me to dismount, the other Hawks had made good their retreat, and I did not see them again. Two others were close to me when I fired, which, so far as I could see, were Harlan's Hawks, as they lacked the rufous colouring on the shoulders and the white band on the tail.

Male. Beak horn-blue; cere yellow; legs light yellow; iris dark brown.

Buteo harlani (Audubon). Harlan's Buzzard.

I noticed this bird on several occasions, but was not fortunate enough to shoot one. I have one specimen shot by a lad on the Medina River. A man living near there, a good sportsman and careful observer, told me that he had several times found nests of this bird; and Dr. Heermann took the eggs there some years ago.

Buteo borealis (Gmelin). Red-tailed Buzzard.

Common throughout all Texas at all seasons of the year, breeding in all parts, preferring, however, the heavily-timbered country. I procured the eggs from Systerdale and also from the Medina River.

I shot several very large specimens of this bird, which approach very nearly Professor Baird's description of *B. montanus*; still on careful examination I do not think they are anything but the common Redtail.

Buteo lineatus (Gmelin). Red-shouldered Buzzard.

This bird I noticed all through the country, from the Nueces eastward. It breeds in the heavily-wooded river-bottoms of the Medina, Guadaloupe, Attascosa, &c.; but I did not succeed in procuring the eggs.

Buteo elegans, Cassin. Red-bellied Buzzard.

Not uncommon near San Antonio during the winter season; but I am very doubtful as to whether it remains there to breed.

Buteo pennsylvanicus (Wilson). Broad-winged Buzzard.

Not uncommon from the Nueces River to the eastward. In September I noticed several near the Mission of San Patricio. and during the winter shot several specimens near San Antonio, In May I shot a young bird on the Medina, and early in June found a nest, containing young, near the Colorado river. It was placed on a high cotton-wood tree, and in an almost inaccessible position.

Archibuteo ferrugineus (Lichtenstein). Squirrel-Hawk.

A fine specimen was sent to me by Col. McCormick, labelled as having been collected at Fort Stockton by P. Duffy.

Nauclerus furcatus (Linnæus). Swallow-tailed Kite.

I was fortunate enough to find this graceful bird very abundant in some parts of Texas, and had a good opportunity of observing and admiring it in what I think I may call its true home. About San Antonio de Bexar it is only occasionally found, and is generally to be seen late in July, before heavy rains; but nearer to the Rio Grande, and in that portion of Mexico through which I travelled, I did not notice it, nor could I hear of any fork-tailed Hawk. Towards Northern Texas, however, I began to see it; and at Peach Creek and near Gonzales I found it by no means uncommon. On the Colorado, Brazos, and Trinity Rivers it is one of the commonest birds; and every child knows it under the names of Scissor-tailed, Forky-tailed, and Fish-tailed Hawk, or Fish-Hawk. It only remains during the summer months, arriving early in April, and breeds later than the other birds of prey.

On the 26th of May I found this species very abundant on a creek near the Colorado, but, on shooting and examining several examples, ascertained that they had not then commenced breeding. They were, however, preparing their nests; and from the number I saw about one large grove, I should judge that they may probably breed in society. On my wounding a bird, the rest came flying overhead like Sea-Gulls, uttering harsh cries, and I counted between forty and fifty over me at one time To my great disgust, I was compelled to remain in Houston and Galveston during the whole of June, to attend to some urgent business; but a friend, a planter on the Brazos, promised me that he would carefully watch certain nests and secure the eggs for me. Soon after I left he wrote to me, saying that he had examined one nest, but had found the young ones hatched and flown, which, he said, puzzled him, the season being so early. I suppose, however, that it must have been an old nest that the birds were repairing; for he promised to watch and see if the bird would not lay again, and early in July (I not having heard from him in the meanwhile) he met me in San Antonio, and delighted me with the intelligence that he had, about a fortnight previously, secured four eggs for me, which, he considered, would be a sufficient number. These he had blown and packed with great care, leaving them for me at the Brazos. I therefore (being on my way home) could not bring them with me, but arranged with a friend (who will, I hope, soon return to England) for him to bring them.

My friend, the planter, said he could not understand a man collecting a lot of egg-shells; as for stuffed birds, he could see something in that, as they were ornamental. He promised, however, seeing that I really valued the eggs of this bird, to do all in his power to procure a lot of them for me the following spring. He tells me that the Swallow-tailed Kite builds high up in oak, sycamore, or cotton-wood trees, sometimes quite far from the creeks. Those I noticed in May were preparing their nests in some high cotton-wood trees in a grove quite close to the creek.

Most of the negroes know the nest of this bird. One, a very intelligent man, near Richmond, Brazos county, told me that he had seen two nests on one tree, a large sycamore, then adding, gratuitously, that the eggs were worth looking after, as he had eaten them on several occasions and found them very good.

This bird presents a singularly pleasing appearance on the wing, gliding in large circles without apparent effort; still the flight is very rapid. The tail is generally very widely spread; and, when sailing in circles, the wings are kept almost motionless. I watched one very closely, as it was hunting after grasshoppers on a piece of prairie near Brenham. It went over the ground as carefully as a well-trained pointer, every now and then stooping to pick up a grasshopper; and, to me, the feet and bill appeared to touch the insect simultaneously*. They seem very fond of wasp-grubs, and will carry a nest up to some high perch and sit there, holding it in one claw, and picking out the grubs. I once saw one drop a nest, and catch it before it reached the ground. I examined the stomachs of all I shot (some ten or twelve), and found them to contain sometimes beetles, sometimes grasshoppers. On my labels I find noted as follows:—Iris rich dark reddish brown; bill dark horn-blue; legs light milk-blue, with the divisions between the scutella darkly marked. The sexes are scarcely distinguishable, excepting by dissection; as a rule, however, the female is the larger and more robust bird.

ICTINIA MISSISSIPPIENSIS (Wilson). Mississippi-Kite.

This beautiful little Hawk is by no means an uncommon bird in Texas, being generally found in the same localities as *Nauclerus furcatus.* Near San Antonio it is not very common, but is occasionally found there, and breeds there, as I procured both the old and young birds during the summer. In November 1863 I noticed a pair flying about near Howard's Rancho, on the Medina, but did not succeed in shooting them.

In travelling eastward in the month of May, I first noticed this bird near the Rio Colorado, and was told, by the negroes on one of the plantations, that they were then nesting. On the

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* *Cf.* Ibis, 1860, p. 242.—ED.

20th May I shot a female on the banks of the Colorado, from which I extracted a fully formed but not quite perfect egg. It was almost round, and, for the size of the bird, rather large; but of the colour when perfect I could, of course, form no opinion. I was sorry that I was unable to remain a few days there and procure the eggs; for I feel certain that I could have succeeded in finding several nests had I only had time enough to spare.

Eastward of the Colorado I saw this bird pretty often, but, owing to the great difficulty in sending anything towards the Mexican frontier, I did not shoot any more. Indeed, I am glad I did not do so, as I could never have brought the skins away with me.

The young bird I have differs considerably from the adult. It is dull brownish-black above, spotted with pure white, the tips of the wing-feathers being edged with white, the throat and space round the eye yellowish-white; the entire under parts dull whitish, with longitudinal stripes of reddish-brown; and the tail blackish-brown, almost imperceptibly edged with dull white.

CIRCUS HUDSONIUS (Linnæus). American Harrier.

Abundant throughout the whole country eastward of the Rio Nueces, at all seasons of the year. I noticed far more in full blue plumage there than I did in New Brunswick, where it is also common. In the neighbourhood of San Antonio I used to meet with them on the prairies, where they feed on the small green lizards which abound there, and which they catch with great dexterity.

HALIAETUS LEUCOCEPHALUS (Linnæus). Bald Eagle.

Not uncommon in some parts of the country, more particularly near the head-waters of some of the rivers. Westfall the hunter (the well-known guide through the Indian country), who met me at Uvalde in March, told me that on his way down from his camp on the Leona, a distance of about forty miles, he had noticed no less than eight nests. He told me, however, that it was no use climbing up to them for the sake of the eggs, as they would be hatched out by that time. It breeds also on the Attascosa.

Polyborus tharus (Molina). Caracara-Eagle.

This bird, which is also known under the names of Mexican Eagle and Dominica Buzzard, is abundant from the Rio Grande to the Rio Guadaloupe; but further east I never noticed any. It consorts altogether with the Vultures, feeding on carrion, and walking about with ease, but is not often seen in such numbers as they are. Near San Antonio they are abundant, and in December 1863 I counted upwards of twenty of these birds together, with a lot of Vultures and several Harris's Buzzards, all busy with the offal near the slaughter-house. It breeds all over the country, building a large, bulky nest of sticks, lined with small roots and grass, generally placed in a low mezquite or oak tree, and laying three or four roundish eggs, marked much like those of the European Honey-Buzzard. I found several nests in April and during May; but the rancheros told me that they find eggs as late as June. East of Seguin I saw very few of these birds, and, as I before said, none east of the Rio Guadaloupe. When alive, this bird has the legs yellow, bill bluish, and the naked space round the eye of a beautiful rose-coloured tinge, or, rather, rose-coloured tinged with carmine. The young bird has the legs dull bluish-white.

Craxirex unicinctus (Temminck). Harris's Buzzard.

Common throughout the whole country to the Colorado River, after which I noticed but few. This was the only Hawk I noticed at Matamoras during the summer. It is a heavy, sluggish bird, seldom seen on the wing, and subsisting, so far as I could see, entirely on carrion. All along the road from Brownsville to San Antonio I noticed these birds, either perched on some tree by the roadside or busy, in company with Vultures and Caracaras, regaling themselves on some offensive carrion.

They breed in the neighbourhood of the San Antonio, Medina and Attascosa Rivers, having eggs in the month of May. A nest found on the 4th of May, near the Medina River, was built of sticks, very slightly lined, and placed in a low hackberry-tree. The eggs, four in number, were white, with a faint bluish tinge, very sparingly spotted and blotched with red. Dr. Heermann wished Mr. A. Newton to have them, and they were accordingly reserved for that gentleman.

In fresh-killed specimens the bill is bluish, cere yellow, iris brown, and legs yellow.

STRIX PRATINCOLA (Bonap.). American Barn-Owl.

I have a single specimen of this bird, which was sent in to Dr. Heermann as a great rarity.

BUBO VIRGINIANUS (Gmelin). Virginian Eagle-Owl.

Common throughout the country, breeding in most of the heavily-wooded river-bottoms, building an open nest, generally placed on an oak by the river-side.

SCOPS MACCALLI, Cassin. Western Mottled Owl.

I shot a couple of small Owls, one near the town of San Antonio and the other at Galligher's Rancho, Bandera county, which Dr. Heermann pronounced to be *Scops maccalli.* I was, however, rather doubtful about them, and am sorry not to find them amongst the skins that I have succeeded in bringing home in safety.

BRACHYOTUS CASSINI, Brewer. American Short-eared Owl.

[Common at times near San Antonio during the winter months, keeping itself in the tall weeds and grass.—A. L. H.]

SYRNIUM NEBULOSUM (Forster). Barred Owl.

Very abundant, at all seasons of the year, in the wooded parts of the country. I did not find any nest, but was told by the hunters that they build in a hollow tree in the dense woods near the river.

ATHENE HYPOGÆA (Bonap.). Prairie-Owl.

This bird I noticed at all seasons in the prairie-country. Near the Rio Leon and Medina they are not uncommon, and in one place had taken possession of some deserted rat-holes.

I shot several specimens near San Antonio and at Eagle Pass, at which latter place I found them quite common on the sand-plains near the town. In specimens I shot, the legs were greenish grey; iris bright yellow; beak dull greenish, with yellow tip; and stomach containing coleopterous insects and field-mice.

NYCTEA NIVEA (Gray). Snowy Owl.

[A single specimen was shot near San Antonio, three years before the war.—A. L. H.]

[To be continued.]

XXIX.—*On an apparently undescribed Bird from the Seychelle Islands.* By Alfred Newton, M.A., F.L.S.

(Plate VIII.)

At the beginning of the present year I received a letter from my brother, Mr. Edward Newton, which contained the information that His Excellency Sir Henry Barkly, Governor of Mauritius, had lately procured from one of the islands in the Seychelle archipelago a living example of a black-and-white bird, called there the "*Pie chanteuse,*" which my brother was unable to identify with any species known to him. The bird lived in Lady Barkly's aviary at Réduit for more than two months, and, then dying, was most obligingly given by her to my brother. Its skin has been sent to me, and I have had the opportunity of submitting it to several of my friends—among others to Mr. G. R. Gray and Dr. Sclater—none of whom recognized it as a described species. I have therefore thought it advisable to have the specimen figured here, from the conviction that, if it be of an already known species, it will be speedily referred to its proper designation.

The "*Pie chanteuse*" of the Seychelles appears to belong to the genus *Copsychus,* and to be nearly allied to the rare *C. pica* (Natt.), discovered by Bojer in Madagascar—a species I have never seen, the only three specimens known, two males and a female, being, according to Dr. Hartlaub (Orn. Beitr. zur Fauna Madagascar's, p. 38), contained in the Vienna Museum. But, from the description given, *C. pica* must be very considerably smaller*, and much more varied in colour than the bird I am now about to define, which is entirely of a glossy bluish black, with the exception of a pure white patch on the *upper* wing-coverts; while the Madagascar species seems to have the under surface of the wings, the edges of the secondaries, the abdomen, and some of the outer tail-quills white, in addition to the white *middle* wing-coverts.

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* Dr. Hartlaub says of *C. pica* (*loc. suprà cit.*) "long. tot. 7'''." This is evidently a mistake, and probably "7''" was intended. In this case an accidental error is easily detected; but in many instances the use of the method of notation employed by my learned friend seems likely to lead to confusion.

The skin sent to me is marked as that of a young male bird; but it appears to have assumed its mature plumage; though it is to be noticed that above, and in front of, the right eye there is a single white feather, which may be either an accidental circumstance or else an indication of some seasonal change of dress. Premising also that, when first caught, its wings and tail were cut, and that they may therefore not have yet attained their full growth, I accordingly proceed to characterize this species as

COPSYCHUS SECHELLARUM, sp. nov. (Plate VIII.).

C. omnino niger, nitore chalybeo resplendens, tectricibus alarum superioribus albis exceptis. Rostro et pedibus nigris. Remige primo brevissimo, secundo duplo longiore, tertio probabiliter longissimo: cauda valde gradata. Iridibus fuscis: lingua et rictu interne citrinis.

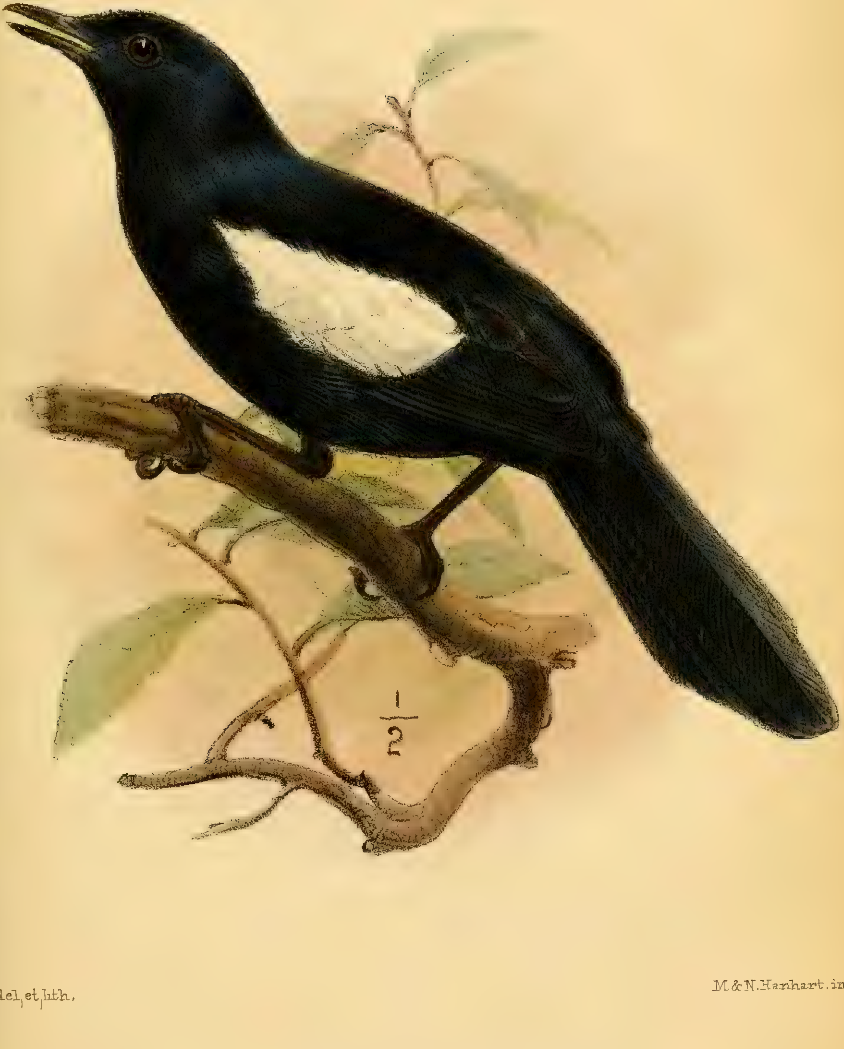
Long. tota 10, alæ a carp. 4·65, caudæ 4·4, rostri a fronte ·75, a rictu 1·3, tarsi 1·45, digiti med. cum ungue 1·15, hallucis c. ung. 1·01 poll. angl. et dec.

Hab. In insulis Sechellarum quibusdam.

Mus. A. et E. Newton.

The person who obtained this bird informed my brother that it was only found on two islands of the group, one of them being a small islet quite close to Mahé. But on the matter of its distribution in the Seychelles, I trust that my brother will before long be able to give some more precise information; as he hopes, on his way home to England from Mauritius, to pass a month in exploring that archipelago, the avifauna of which, from the little we know of it, is likely to present some singular and interesting facts.

I cannot, however, conclude this short notice without remarking on the various services rendered to ornithology by Sir Henry Barkly, some of which, as it seems to me, have not met with their due acknowledgment. It is, I believe, mainly to his good offices that the Zoological Society owe the living example of *Didunculus strigirostris* which they received about a year ago; for though Mr. Williams had long been endeavouring to obtain specimens of this bird, it was not until a drawing from Mr. Gould's plate representing it had been transmitted to the Samoan Islands through Sir Henry Barkly (at that time Governor of Victoria),



J. Wolf. del. et lith.

M. & N. Hanhart. imp

COPSYCHUS SECHELLARUM.

that the examples were procured, which were afterwards purchased at Sydney, and so handsomely presented to the Society by Dr. George Bennett.

XXX.—*Recent Ornithological Publications.*

1. English.

In an appendix to the second volume of his friend Captain Spratt's recently published 'Travels and Researches in Crete,' Lieutenant-Colonel Drummond-Hay has reprinted, with a good many alterations, his 'List of the Birds of the Island of Crete,' which was published some three-and-twenty years ago in the 'Annals and Magazine of Natural History' (vol. xii. pp. 423–427). The observations on which this list was founded were made during a residence from the 27th April to 18th June, 1843—very nearly two months, and that at the best season of the year for ornithological purposes. In each paper the number of species noticed is the same, namely, 105; but this result is obtained by the omission from the second edition of the Common Quail (which must surely visit the island) and the splitting of *Motacilla flava* into *M. cinereocapilla* and *M. melanocephala*. *Falco subbuteo* is now replaced by *F. eleonoræ*, which was "seldom noticed in the middle of the day, but towards evening might be seen in small flocks, in pursuit of a large species of beetle, which they dexterously strike and hold in the claw, devouring their prey on the wing." Col. Drummond-Hay states that this species probably breeds on the island, from the circumstance of its having been seen so late as the 12th of June; but, according to Dr. Krüper's experience (Journ. f. Ornith. 1864, pp. 1–23) in the Cyclades, there would yet be plenty of time for it to go elsewhere before August, which, singularly enough, seems to be its usual time of nidification. A few other changes of less importance are made in the identification of the birds noticed. For instance, for *Fringilla montium* we now have *F. linaria*, of course not the Linnean species (*cf.* Ibis, 1865, p. 129, *note*), but probably our Lesser Redpoll. It is suggested that the Cretan Chaffinch may be *Fringilla spodiogena*, instead of *F. cœlebs*, as the last-named bird is only a winter visitant to Corfu, and is extremely scarce in Greece, while in Crete a Chaffinch is very numerous, breeds, and probably remains throughout the year. Unfortunately Col. Drummond-Hay has no specimens for comparison; and the exact state of the question, with some other points of like interest, must remain undecided until some ornithologist sets them at rest. We wish there was any chance of the worthy President of the B. O. U. revisiting the localities where he gained his early laurels, and recording his observations in our pages, to which, until now, his name has been a stranger!

The two works* which in little more than a twelvemonth have been published by the writer whose pseudonym is so agreeably known to the readers of one of our sporting newspapers demand some notice at our hands, more indeed than we can now accord to them. Mr. H. W. Wheelwright (for we believe we need not feign any ignorance of what almost every one knows to be the "Old Bushman's" real name), in 1863, emulous of the success which had attended Mr. Wolley's protracted researches in Lapland, proceeded to that country, selecting as the scene of his own operations the district around Quickjock, some hundred miles to the west and south of the large tract which sufficiently engaged his predecessor's labours. Here he passed several months, forming a fine collection of birds and eggs, and making some excellent observations on the natural history of the district, which, having first appeared in a series of papers in the 'Field,' were soon afterwards collected into the smaller volume whose title is appended to this notice. The avifauna of Luleå Lappmark differs not inconsiderably from that of the regions further north and east, the products of which are now pretty well known to us through Mr. Wolley's exertions, several of the *Anatidæ* and *Scolopacidæ* which breed plentifully in the valley of the Muonio being found to be rare or not to occur at all on the tributaries of the Luleå. Mr. Wheelwright was so fortunate as to obtain from some Lapps the contents of the nest of a Snowy Owl (*Nyctea nivea*) from the Norwegian frontier, the only eggs of that species from Scandinavia which, so far as we know, have ever come into the possession of naturalists, with the exception of those recorded by Herr Lilljeborg (Œfvers. K. Vet.-Akad. Förhandl. 1844, p. 212).

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* A Spring and Summer in Lapland. By an Old Bushman. London: 1864. 12mo.

Ten Years in Sweden: being a Description of the Landscape, Climate, Domestic Life, Forests, Mines, Agriculture, Field-Sports, and Fauna of Scandinavia. By an Old Bushman. London: 1865. 8vo.

Mr. Wheelwright's larger work, as will be inferred from its title, is of much greater pretensions; yet we do not like it so well as its forerunner. As a close observer of out-door phenomena, he is not easily surpassed; and he has the knack of writing down what he has observed in plain, unaffected language; but all this is altered when he becomes a compiler, and though he tells us his library is "such as few British naturalists could beat," we have our doubts either as to its extent or the manner in which he uses it. He appears, for instance, not to be aware of the valuable series of papers by Herr Wallengren in the 'Naumannia,' which no person writing on the birds of Scandinavia should fail to consult; and he ignores the fact that Dr. Kjærbölling is not considered by all his countrymen so sound an ornithological authority as would appear from the frequent reference to his name in these pages. Indeed it is something like putting a race-horse to draw a plough, for an original and keen observer like Mr. Wheelwright to sit down to the drudgery of compilation. But his 'Ten Years in Sweden' contains much information that our readers will appreciate, and we have great pleasure in recommending it to their notice. We wish it did not so often offend our eyes by its constant mispelling of Swedish words; however, in that respect it is much better printed than the 'Spring and Summer in Lapland.'

We have spoken of 'Ten Years in Sweden' as a compilation; we might fairly characterize it by a harsher term. Surely there is a tendency to "book-making" in it, shown by the addition of lists of the birds of Spitsbergen and Greenland, the latter of which countries has nothing whatever to do with the Scandinavian peninsula. Dr. Malmgren's paper, to which we referred in our last number (*suprà*, p. 227), is of course laid under contribution for a knowledge of the avifauna of Spitsbergen, while our author does the 'Ibis' the honour of borrowing, and occasionally misquoting, without any acknowledgment of the channel through which Professor Reinhardt made known his researches to the public, the facts and inferences contained in that learned naturalist's paper "On the Birds of Greenland," which appeared in the former series of this journal (Ibis, 1861, pp. 1–19).

The recently published part of the 'Transactions of the Zoological Society' contains in full Professor Owen's paper "On the Skeleton of *Alca impennis*," giving the first account of the osteology of that interesting bird yet published. The materials from which this memoir is drawn up were chiefly furnished by the natural "mummy" we were so fortunate, through the kind aid of the Bishop of Newfoundland (*cf.* P. Z. S. 1863, p. 435), as to be able to place in the Professor's hands, supplemented in several important parts, which are wanting in our own specimen, by bones we obtained in Iceland, and others extracted with singular skill by Mr. John Hancock from a preserved skin in his possession. As Professor Owen is confessedly the greatest descriptive anatomist of the day, we need say nothing of the manner in which he has described the skeleton of the Gare-Fowl; but we regret to find that the plates, two in number, which accompany the paper are not sufficiently illustrative of the bird's osteology. It appears to us that figures showing in detail the comparative lengths of the wing-bones in the Great Auk and its near relative *Alca torda* might have been introduced to advantage, and especially a full-sized representation of the coracoid, that most important bone in the ornithic skeleton, which in the only plate in which it is delineated at all is nearly half concealed by the humerus.

Many of our readers will doubtless not be aware of the existence of a revived series of 'The Naturalist'[*], "a boat which" (we quote from the address prefixed to its first number) "has twice" (three times, surely ?) "suffered shipwreck." This resuscitated magazine appeared on the 1st of May last year, and is published fortnightly. Who may be its editor we have no idea; but we congratulate him heartily on having some correspondents of the right sort, men who, when in foreign parts, contrive to keep their eyes open as much as if they had been regularly hatched "Ibises"; and we are sure we can pay them no higher compliment. Among these we may mention Mr. G. F. Mathews, who furnishes some very interesting notes on *Cyanopica cooki* and other birds as observed near Lisbon. It is true that they do not contain matter of very striking novelty, but almost anything respecting the ornithology of a country hitherto so overlooked as Portugal is useful in the way of information. For ourselves, we were not at all prepared to learn that the European Blue Magpie was abundant on the banks of the mouth of the Tagus. This gentleman also found a Blue-throated Warbler (*Cyanecula suecica*) to be "tolerably common" in several localities in that district. We only wish he had told us which of the forms—true *suecica, leucocyanea,* or *wolfi*—it was that he observed there. We have great pleasure in wishing success to the 'Naturalist' and its promoters.

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[*] The Naturalist, Journal of the West-Riding Consolidated Naturalists' Society, and Manual of Exchange in all Departments of Natural History. London: 1864, Nos. 1–16.

2. French.

In the Ninth Volume of the 'Mémoires de la Société Impériale des Sciences Naturelles de Cherbourg' for 1863, are contained some ornithological papers by M. le Capitaine de Frégate Henri Jouan, which are worthy of notice. The most important is entitled "Notes sur la Faune Ornithologique de la Nouvelle Calédonie" (pp. 197–248) from observations made by the author between 1860 and 1862. *Sixty-five* species are included, of which M. Jouan considers that *four* may be doubtful; but of the remainder it seems to us that *ten,* if not more, are substantial additions to the avifauna of New Caledonia, as given by MM. J. Verreaux and Des Murs in the 'Revue de Zoologie' for 1860 (*cf.* Ibis, 1861, pp. 106, 107). It is much to be regretted that our gallant author has not placed himself *en rapport* with those distinguished naturalists, by which means all uncertainty would have been avoided. The ten species we have above mentioned are the following:—

Circus jardinii.
Buteo, *sp. indeterm.*
Collocalia troglodytes.
Collocalia, *sp. indeterm.*
Coturnix, *sp. indeterm.*
Porphyrio melanotus.
Podiceps, *sp. indeterm.*
Sula parva.
Phaeton phænicurus.
Anas, *sp. indeterm.*

These additions, however, are sufficient to show how complete were the materials on which the paper of MM. Verreaux and Des Murs was founded; for it will be perceived that not one species of true *Passeres* is included among them. The skins brought home by M. Jouan have been divided between the Museums of Paris and Cherbourg; so that any of our friends who may chance to attend the concourse of iron-clads announced to take place this summer at the latter port may have the opportunity of seeing some of them. M. Jouan's other contributions to ornithology consist of "Notes sur quelques animaux observés à la Nouvelle Calédonie pendant les années 1861 et 1862" (pp. 93-100), which are better worked up in the paper we have already noticed, "Notes sur quelques animaux observés en pleine mer dans l'Océan Pacifique, et pendant une traversée d'Australie en Europe" (pp. 188-196), which may be usefully compared with the more elaborate article by Captain Hutton contained in our present number, and a "Note sur le Casoar de Nouvelle-Bretagne"—*Casuarius bennetti* (pp. 322-327). We congratulate the French navy on numbering among their officers a naturalist so intelligent and so enthusiastic as Captain Jouan.

3. ITALIAN.

Dr. Tommaso Salvadori has obligingly forwarded to us copies of two papers recently communicated by him, the one to the Italian Society of Natural Sciences, the other to the Royal Academy of Sciences of Turin. In the first, which was read at the meeting of the 4th September last, the author makes some observations on new or little-known birds in the Turin Museum, and characterizes seven previously undescribed species. Five of these are from Brazil, namely, *Myiobius rufescens* (resembling *M. nævius*, but smaller), *Rhynchocyclus cerviniventris*, *Myrmotherula minor* (allied to *M. brevicauda* of Swainson), *Myrmeciza marginata* (intermediate in some characters between *M. ruficauda* and *M. hemimelæna*) and *Hypocnemis* (?) *striativentris*, which last has the typical form of that genus, but wants the concealed interscapular spot. The other two new birds are *Anæretes cristatellus,* from Hayti, and *Thamnistes affinis,* the locality of which is not stated; but the bird differs from *T. anabatinus* by being smaller and having the interscapular spot white, and not orange. Dr. Salvadori has also some remarks on the synonymy of different species of the genera *Lipaugus, Pyrocephalus, Thamnophilus, Formicivora,* and *Oriolus.*

The second of Dr. Salvadori's papers was read on the 7th of May last. Its object is to prove the specific distinctness of the White-backed Vultures of India and Africa. The chief differences are thus summarized:—

Gyps bengalensis (ex Asia).	*Gyps,* sp. (ex Africa).
Beak thick, yellowish at the thickest part, black at the tip.	Beak compressed, elongated, quite black.
General colour black-cinereous.	General colour greyish cream*.

The name *Gyps africanus* is accordingly bestowed upon the latter by the author; but it appears probable that this appellation must give way to that of *moschatus,* which, according to Von Heuglin (Sitzungsb. Akad. Wien, 1856, p. 256), had been previously bestowed upon it by the Duke Paul of Würtemberg.

4. GERMAN.

Since we began to go to press with the present number we have received the last Heft of the 'Journal für Ornithologie,' completing the volume for 1864. The articles we find in this volume are fully as important as those in any of its eleven predecessors; but we perceive a growing indication on the part of our worthy Teutonic brethren to confine their labours to the study of German or, at least, of European species. We do not mention this circumstance in the least by way of complaint; for if charity is said to begin at home, ornithology may plead as good an example, and it is undeniable that it will be yet many years before our knowledge of the avifauna of Europe becomes at all complete. Drs. Hartmann and Von Heuglin contribute long articles on the birds of North-Eastern and Central Africa; but when these are done with, there remain few communications on any but Palæarctic species. The most note-worthy of these exceptional papers is the commencement of a monograph of *Campephagidæ* by Dr. Hartlaub, containing descriptions of the species of *Graucalus* and *Pteropodocys*, which is worked out in the usual admirable manner of that learned author. Besides this, we have translations of Dr. Leith Adam's paper on the birds of Egypt and Nubia, which appeared in the 'Ibis' for last year (we hope, by the way, that Mr. S. S. Allen's remarks on this paper will also achieve the like honour), of Herr von Rosenberg's article on the ornithology of New Guinea, from the 'Naturkundig Tijdschrift voor Nederlandsch Indie,' and, curiously enough, a *re*-translation, from the last volume of the 'Ibis,' of Dr. Haast's interesting observations on the singular and nearly extinct Ground-Parrot of New Zealand (*Strigops habroptilus*), which was originally published in the Vienna Transactions. Professor Peters's description of the new genus (allied to *Bessonornis*) and species, *Cichladusa arquata*, from Zambesia, is also inserted from the monthly Report of the Berlin Academy. Herr Otto Finsch characterizes three new birds—*Chrysotis nattereri*, brought from Brazil by the lamented naturalist whose name it is in future to bear, *Eos wallacii*, from Waigiou, previously mentioned (P. Z. S., 1861, p. 431) by Mr. G. R. Gray as *E. cochinchinensis*, var., and *Pyrrhulauda modesta* from the Canaries; while Drs. Hartlaub and Cabanis respectively describe *Ptilinopus cæsarinus* from the Feejees and *Conurus heinii* from Bogota. To the latter species *Gnathosittaca* is assigned as a sub-generic appellation.

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* *Cf.* J. H. Gurney, Cat. Norwich Museum, part I. p. 77.

Among the articles relating to the Palæarctic region, the waifs and strays of the great irruption of *Syrrhaptes paradoxus* still continue to occupy the attention of German ornithologists; but no new information of importance appears to have been obtained. There can be no doubt that those ill-used voyagers entirely failed to establish themselves in Europe. The last recorded occurrence of a Pallas's Sand-Grouse that we can find is by Dr. Opel, who, writing on the 20th July, 1864, states (J. f. O. 1864, p. 312) that a live example, which had flown against the telegraph-wires near Plauen, in Saxony, was sent to the Zoological Garden at Dresden about a month previously. More interesting, perhaps, than any of these papers are two relating to scarce European *Accipitres*. The well-known Dr. Krüper has at last given us a detailed account of his discovery respecting the breeding of *Falco eleonoræ* in the Cyclades, which will well repay attentive perusal. One most curious part in the economy of this species seems to have been quite unsuspected before, since no allusion is made to the circumstance by Professor Gené, who, however, describes and figures its egg (Mem. Acad. Torino, 1840, p. 44, tab. i. fig. 2). This is the very late period of the year at which it breeds. Dr. Krüper found it, on the islands of Paros, Naxia, and Mykoni, laying its eggs in the month of August. Several of the specimens collected by him are now in our possession, and much resemble, as might be expected, those of the common Hobby in colour, but are considerably larger. There appear to be four distinct styles of coloration in the underside of the adult female of this bird: (1) Ferruginous with black spots, the chin and cheeks yellowish, without black shaft-streaks, the moustache very plain and nearly black, flanks bright ferruginous; (2) Ferruginous with blackish-brown spots, the chin and cheeks of the same colour, but brighter in hue, the moustache blackish-brown; (3) Dark brown with blackish-brown spots, even to the chin; (4) Almost entirely black, with the exception of the abdomen, where the dark brown shows itself. In the two last plumages the moustache is indistinct. *Falco eleonoræ*, as Dr. Krüper justly remarks, is doubtless identical with *F. arcadicus* and *F. concolor* of Lindermayer (not of Temminck) and with *F. dichrous* of Erhard. It appears to prey chiefly on birds, among them on the Woodchat-Shrike, and, as Dr. Krüper was told, on the Common Snipe. This indefatigable ornithologist has made another valuable discovery also relating to a rare and hitherto somewhat obscure European bird of prey. In the 'Bulletin' of the Moscow Society of Naturalists for 1850 (ii. pp. 234–239) M. N. Severzow described, under the name of *Astur brevipes*, a a new species of Sparrow-Hawk, of which he had obtained three examples from the Government of Voronej, in Southern Russia; and Herr Seidensacher has communicated to the Vienna Transactions (the paper being reprinted in the 'Journal für Ornithologie,' p. 464) the intelligence that, in May 1864, Dr. Krüper found a nest with four eggs of this little-known bird near Smyrna. Dr. Sclater kindly informs us that, when he was at Vienna last autumn, he became aware that *Astur brevipes* was no other than the *Accipiter gurneyi*, founded on examples received from Beyrout (Ibis, 1859, p. 390), and described and well figured by Dr. Bree (B. Eur. iv. p. 158), of which mention has before been made in this Journal (Ibis, 1863, p. 463); and Mr. Gurney has written to us to corroborate this identification. But what is still more interesting, Mr. Gurney finds that the specimens obtained in Galilee by Mr. Tristram, and supposed by him (P. Z. S. 1864, p. 429) to be the *A. sphenurus* of Rüppell, also belong to this species. This discovery was made just in time to insert the right specific name in the paper on the "Ornithology of Palestine," printed in our present number (*suprà*, p. 260), though not soon enough to admit of Mr. Tristram's there giving an explanation of the facts of the case. The species, however, as we are informed by Mr. Gurney, should be referred to the genus *Micronisus*, and accordingly will take its place as *Micronisus brevipes* (Severzow). All we at present know of its history may be condensed into these few words, that it occurs in Southern Russia from April to August, and probably breeds there, as it certainly does in Asia Minor, and that it has been met with once in Greece and several times in Syria. Herr Seidensacher considers *Micronisus brevipes* to be identical with the Indian *M. badius*, and it is probably the species referred to under this last name in Professor Blasius's 'List of the Birds of Europe' (p. 4); but Mr. Gurney is very confident that the two birds, though nearly allied, are quite distinct.

5. DUTCH.

The Sixth Part of Professor Schlegel's Catalogue of the Leyden Museum*, containing the continuation of *Scolopaces*, has reached us. As the account of this group, however, is still unfinished, we at present forbear from any special remarks upon it. From what has been before said of Professor Schlegel's work in this Journal, it is, or ought to be, well known to our readers that it already consists of numerous monographs of genera and families of birds, and forms really a necessary supplement to, and commentary on, the great 'Conspectus Avium' of the late Prince C. L. Bonaparte, so unfortunately left incomplete, thus being, without exaggeration, indispensable to every student of ornithology who desires to ground his scientific labours on a sure basis. We regret to learn that the present work, as is the case with so many books on natural history, is anything but remunerative to its author; but we are confident that ornithologists, on examination, will find we are justified in so strongly recommending it to their notice. It gives, in all the groups treated of, a concise description of every species; and what is still more valuable in the present state of science, the variation noticed in individual specimens is carefully indicated, whether it be variation in form, coloration, or size, the latter particular being especially attended to.

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* 'Muséum d'Histoire Naturelle des Pays-Bas,' 6^{m} livraison. Leyden (no date). (London: Williams and Norgate).

In the First Number for the last year of the 'Nederlandsch Tijdschrift voor de Dierkunde'—the organ of the Royal Zoological Society "Natura Artis Magistra" of Amsterdam—Professor Schlegel announced (p. 1) the discovery of a new Bird of Paradise in the Island of Waigiou by Dr. H. A. Bernstein, which that indefatigable traveller proposed to call *Schlegelia calva*; and in a later Number of the same Journal (p. 320) he defines this new genus as follows:—"*Pileus ex fere toto calvus, paucis tantum striis plumatis instructis. Rectrices duæ mediæ in mari longissime, reflexæ, in spiram contortæ.*" Dr. Sclater has just received an engraving of this bird from Holland, and has kindly drawn our attention to the remarkable similarity which exists between it and the plate in the 'Journal' of the Philadelphia Academy (vol. ii. pl. 15.), representing *Diphyllodes wilsoni*, a similarity so great that we think it scarcely possible the two supposed species can be otherwise than identical. It is of course hazardous to pronounce an opinion of this sort without actual comparison of the type specimens, but in this case we think Dr. Sclater cannot be mistaken. The only apparent difference is in the heads of the two figures, that of *D. wilsoni* being clothed with black feathers, while in *Schlegelia calva,* as the name implies, it is bare, and of a bright cobalt-blue. We beg leave to suggest to Mr. Cassin that the Philadelphian specimen should be closely examined; for, being a skin of "native" preparation, it seems to us possible that the head of some other species might have been substituted instead of its own (which, when dry, and its brilliant colour faded, would doubtless not have presented a very sightly aspect), in the hope of improving the appearance of the specimen, and thus bettering its sale. Should this not be the case, and the Malays stand acquitted on the *capital* charge, we must conclude that the loss of the head-feathers is either seasonal or else the last stage undergone in the bird's progress to maturity; for the rest of the splendid plumage appears equally perfect in both figures. At any rate, however, to Dr. Bernstein is due the discovery of the proper habitat, and of the female, of this very beautiful Bird of Paradise.

In the same paper, Dr. Bernstein gives descriptions of four other new species, three from Waigiou, to wit, *Arachnothera vagans, Zosterops fusca,* and *Corvus megarhynchus,* and the fourth, *Ptilopus ochrogaster* from Batchian.

Professor Schlegel has also an important notice (pp. 155–157) respecting *Astur macrurus.* This species was established by Temminck on a single example in immature plumage killed by Heer H. Pel on the Gold Coast, and now at Leyden. The specimen was described by Dr. Hartlaub (Orn. W. Afr. p. 11) and also by Professor Schlegel (Mus. des Pays-Bas, *Astures,* p. 25), and bears a ticket marked "mâle" by Temminck himself. Lately another specimen, smaller than this, and apparently more adult in its plumage, has been received at Leyden from Heer Nagtglas, formerly Governor of the Dutch possessions on the coast of Guinea. This last Professor Schlegel now considers to be the true male of the species, and the example which served as Temminck's type to be the female. From the descriptions of the two birds, and their measurements as given, we have little doubt that this opinion is correct.

6. AMERICAN.

The Third Part of Mr. Elliot's 'Monograph of the Tetraoninæ'* has been published. It contains figures of

Cupidonia cupido.
Tetrao urogallus.
Dendragapus richardsoni.
Lagopus persicus
,, albus (summer plumage).
,, ,, (winter plumage).

The plate representing *Lagopus persicus* is copied from a drawing by Mr. Wolf of the type-specimen of this so-called species (which, we may remark, has never yet been described) in the British Museum. We have not the slightest doubt that the bird is only an accidentally pale variety of the common Red Grouse (*L. scoticus*), and that a wrong locality has been assigned to it. A few years ago Mr. Leadbeater drew our attention to a Grouse sent to him to be stuffed (we believe from Perthshire), which was the very counterpart, in every respect, of the type of the so-called *Lagopus persicus* in the National Collection. This "light-grey variety" was mentioned years ago by Mr. Selby as existing in the county of Durham (Ill. Brit. Orn. i. p. 429), and we are sorry Mr. Elliot has not, once and for ever, annihilated the "bogus" species founded upon it.

Professor Baird continues the publication of his 'Review of American Birds' in the same admirable manner which called forth our praises in the last number of this Journal (p. 229). That it will be the book of authority on North American ornithology for a long time to come there can be little doubt. The immense series of specimens, whether only temporarily lent or deposited permanently (but the latter out of all proportion to the former) in the collection of the Smithsonian Institution, gives him an advantage such as probably no other ornithologist of what country soever has at any time previously enjoyed; and the Professor, as our readers need not to be told, is not the man to neglect opportunities of this kind. We are almost inclined to regard this work as the precursor of a new era in natural history. Hitherto a zoologist has thought he has done very well if he has closely examined some half-dozen specimens, presenting the different appearances depending upon age, sex, or the like, of one species. He will now find, from an inspection of Professor Baird's labours, that an acquaintance with a much larger number of individuals, especially from different localities, is requisite if he intends to advance his science. One result of this attention to increased material, if generally followed, we suspect will be the very desirable one of nullifying the species-makers—species-makers, of course we mean, in a bad sense, for there are no more useful men, if they will but keep their hobbies under command.

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* In the notice of the two first Parts of this work in our last number (p. 229), the contents of Part I. were, by mistake, referred to Part II., and *vice versâ*.

To criticize this work as it should be done, we frankly avow, is quite beyond our power now. We trust, either as it proceeds (and it has now attained a goodly bulk) or when it is concluded, to induce some of our contributors, whose personal acquaintance with Neogean forms is perhaps only inferior to Professor Baird's, to offer our readers such a commentary upon it as will be worthy of their attention. We will now only stay to remark that the author, with the aid of Dr. W. Stimpson, has been subjecting the tongues of several species of different families, and especially of *Cærebidæ*, *Mniotiltidæ*, and *Vireonidæ*, to a microscopical examination, the chief result of which is that *Dendrœca tigrina* is now removed into a genus by itself, under the name *Perissoglossa*, its lingual structure being so fundamentally different from that of other members of the family as almost to warrant its entire removal from the *Mniotiltidæ*. Professor Baird introduces (p. 163) woodcut representations of this organ in birds belonging to nine different genera, and a comparison of the diagrams shows there is no *lapsus linguæ* in speaking of *Perissoglossa tigrina* as having the tongue *par excellence* among its allies.

XXXI.—*Letters, Extracts from Correspondence, Notices, &c.*

The following letters have been received, addressed "To the Editor of the 'Ibis':—

Takow, Formosa, 27 Feb., 1863.

Sir,— . . . . Ducks and Teal were abundant in our lagoon throughout December and January, and the market was well supplied with them, but the return of warm weather has made the wild fowl scarce. Teal are caught here in nets. Special spots are cleared among the reeds, and the quiet open water exposed in small patches, to which the Teal resort to feed at night. As they fly low to these places, the fowlers suspend loose nets from the tops of bamboo-poles, and at dusk the flocks dash against them, bringing them down and being involved in the meshes. They are thus bagged and brought alive to market. We do not appear to be visited by Geese, Swans, or Pelicans, though during winter most of the other aquatic birds of the Chinese coast occur. In addition to those already noted among the Sandpipers, I may name the Redshank (*Totanus calidris*). Snipe are in great abundance, *Scolopax gallinago* being far more abundant than *S. stenura*; and *Rhynchœa sinensis* is also pretty numerous.

The other day half-way up Apes' Hill, on a white patch caused by a heavy land-slip, I observed what I took to be a black tree-stump; but a shining white spot on it excited my wonderment. As we ascended the mass of coralliferous debris, the stump-like object took wing and slowly flapped away amid the hoots and grunts of several monkeys that were sporting on the hill-side. I then saw that it was an adult Imperial Eagle (*Aquila heliaca*), the white spot being one of the conspicuous shoulder-patches this bird carries in the mature plumage. I fancied afterwards that I saw another of the same species in company with it. A large Eagle-like bird has since been observed by a friend of mine here. From his description I took it to be *Haliæetus albicilla*; but it may have been *Spizaetus orientalis*, procured before at Tamsuy. *Pandion haliæetus* is not rare here, and *Circus spilonotus* (both males and females) pretty common, as also at Amoy at this season. The Kestrel [*Tinnunculus japonicus* ?] is also common, but I have not succeeded in getting a specimen as yet. The Peregrine Falcon I have observed, and, I think, the Hobby, Merlin, and Sparrow-Hawk, but of these last I cannot be certain. I saw a Buzzard-like bird yesterday wheeling in circles high overhead. The two central feathers of its tail were elongated. I cannot form any speculation as to what it was, for it may have been one of the species with which

I am not acquainted. Kites (*Milvus melanotis*) are of course numerous, and are just now laying their eggs. An Owl, flushed by me on the top of Apes' Hill the other day, puzzled me. In habit it was like *Asio brachyotus,* but apparently a good deal larger. The only Owl I have yet obtained here was a rufescent specimen of the pretty little *Scops japonicus,* preserved alive in December. The fine sunny climate during winter at Takow draws close on that at Amoy; but it is warmer here, and, at any rate, vastly different from the humid Tamsuy climate. Swallows and Drongos, as I mentioned before, may be found here all the year round. By the way, I saw one of the latter (*Dicrurus macrocircus*) with a small bird in his claws. The quarry appeared to be *Drymœca extensicauda,* mihi. Before proceeding further I will give you my note on the small Owl which died 21st December:

Scops japonicus. Rufescent. Iris fine clear yellow. Bill greyish-brown; lower mandible ochreous. Feet bluish-grey, tinged with brown. Claws light brown at base. Entire length about 7 inches. Wing 6 inches. Tail (of twelve feathers) rounded, 2·9 inches.

I communicated before (Ibis, 1863, p. 380) the fact of *Munia acuticauda* having been domesticated in Japan to the extent of every shade of albinism and melanism, but I have not yet discovered whether the bird is found wild in those islands. I have since seen domesticated Java Sparrows (*Oryzornis oryzivora*), also from Japan. These birds can scarcely be indigenous to Japan, and must have been taken there by the Dutch from Java. In the domesticated race every variety of albinism occurred, but I saw no signs of a melanite tendency. The domestication may have only been partial. They breed freely in confinement, as do the *Muniæ.*

Consul Caine, at Swatow, as I told you, sent me a specimen of a *Merops* which I identified as *M. philippensis* (*suprà,* p. 230). He has since informed me that it was shot there in August (and not, as I before said, "in the beginning of winter"), when in company with some others of its species. They kept perching on the tops of bamboo-poles, and sailing into the air after insects. Among the birds sent me by Mr. Caine are some that are well worth noting:—

Vanellus cristatus in winter plumage, shot at Swatow in November 1864. The most southerly locality for this bird on the China coast.

Fulica atra, the same season, also the most southern occurrence that has come to my knowledge.

Circus æruginosus (Marsh-Harrier). The first occurrence of this species noted in China, and at a low point on the coast; but, curiously enough, it has also lately turned up at Amoy, of which more anon. Captain Blakiston procured this bird in Japan.

I had occasion to visit Hong-Kong last month. I spent the 14th and 15th of January there, and of course visited the bird-shops. The lively half-Tit half-Robin, *Liothrix lutea,* was caged in abundance. Perched on a bamboo, to which he was tied, was a *Urocissa sinensis,* wild but bold and pugnacious, ruffling his feathers and attacking the hand I put forward. In style and manner he much resembled our Formosan friend, *U. cærulea.* The irides, however, were of a *deep burnt-sienna, tinged with crimson.* I have found the crimson eye to prevail in all the specimens I have hitherto shot at Foochow, and, from this specimen, such would appear to be the colour of that feature in the Hong-Kong bird. Whence then the live specimen in the Zoological Gardens at home, with the light yellow iris? Is it truly from China? If so, from what part? May there not be two species on the China coast? I recollect, while in England, asserting that the irides of the Chinese *Urocissa* were red, but my statement was so much ridiculed that I began to disbelieve it myself, fancying I might have been mistaken; but a sight of the Hong-Kong live bird recalled the whole truth to mind. I see Dr. Jerdon (Birds of India, ii. p. 310) gives the irides of his Indian *U. sinensis* as "fine red."

In a small cage in one shop, I saw a pair of small Finches of a blue and olive plumage, with black Sparrow-like bills. They were said to be from the interior of South China, but I can find nothing like them in Dr. Jerdon's pages. They were not in good condition, and had no tails; so I did not purchase them. What could they have been?

I saw several live Pheasants (*Phasianus torquatus*), for which large prices were asked. Among them was one curious variety, looking uncommonly like what I recollect of a *P. mongolicus* I saw in Mr. Gould's possession, but on its back and flanks were scattered feathers of the ordinary character. It was in bad health, the cheek-skin being quite sallow and sickly-looking.

GARRULAX AURITUS (Daudin), Blyth, 'Catalogue,' p.95, I purchased alive, and sent to Dr. Squire for the Society's Gardens. It seems to range from the extreme south of China to the Tenasserim Provinces, whence Mr. Blyth procured it. I have never met with it wild. It is a fine species, in size rather larger than *G. perspicillatus*. Bill black; legs and claws brown; irides crimson. Forehead and a short crest at the base of the culmen black, a streak of which colour also encircles the eye, and a patch of the same occurs on the throat and under the neck. Just in rear of the frontal crest are a few pointed white feathers, and there is an oval white patch on each cheek. The general plumage is cinereous. Back, wings, and tail, olive-brown, darker on two last, with deep-coloured shafts. Quills edged with cinereous. Blue-grey on head. Ordinary call like a *corvine* croak. Loud note like "hurrah," often repeated. It also emitted a low whistle. It was very lively and noisy.

CERIORNIS CABOTI, Gould, P. Z. S. 1857, p. 161. I was fortunate enough to pick up what I took to be a live specimen of this extremely rare species*. It has also gone forward to Dr. Squire at Calcutta. It was apparently a young bird, with a little knob at the base of the bill, and wart-like spurs on the tarsi. Bill horn-coloured, orange at the base of the gonys. Legs light flesh-brown. Eye-streak and edge of crest fiery. Plumage brown (Hen-like), mottled with black, and spotted with fiery, studded all over with light dingy-ochreous ocelli. Tail short, blackish-brown, with pale brownish mottlings. Head variegated with black and sienna-red, more or less bright. Skin round the eyes and cere pink, the latter pretty thickly clothed with feathers. Arrow-shaped white spots on the under parts. Size that of a large female *Gallus domesticus*.

A pair of small Quail drew my attention. They had been received by the bird-seller from Canton. A day or two after, when passing through Swatow, Mr. Caine showed me the skin of one of the same species, and said that, among the large number of Quail seen by him this winter (for they have been unusually abundant this year), he had only observed one pair of these, which he procured by a right-and-left shot. They looked as large as Common Quail (*Coturnix communis*) when on the wing, and had a very similar flight. In the striation of the breast and the bright yellow legs they were very like a *Turnix*, but they were nevertheless true Quails. The only described bird this species might be is *Coturnix coromandelica* (Gmelin), *C. textilis*, Temminck. I can, however, neither reconcile the figure nor the description of that in the 'Cabinet of Natural History' with our species; I shall therefore bring it forward provisionally as

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* It has hitherto been known only from the type-specimen in Dr. Cabot's collection at Boston, which was said to have been obtained at Macao (*vide* Sclater, P. Z. S. 1863, p. 123).—ED.

COTURNIX CAINEANA, sp. nov.

C. fere turniciformis, supra saturatior, facie gulaque rubris, pectore cum lateribus fulvis transversim nigro-striatis, ventre albido, axillariis niveis, remigibus fuscis ochreo-marginatis, rostro nigro, pedibus aurantiacis.

Upper plumage Quail-like, but of a deeper brown, the median stripes on the rump being broad. Quills light hair-brown, narrowly edged with ochreous. Face and throat brick-dust red. Breast and flanks light buff, with transverse blackish-brown bars. Vent deeper coloured; belly dingy white; axillaries pure white. Bill blackish brown, with pale tip and tomia. Inside of mouth ochreous. Legs orange-yellow, with a little brown on the claws. Iris hazel.

Length 5·25 inches; wing 2·9 inches; tail soft, and scarcely distinguishable. Tarsi 0·85 inch, middle toe and claw 0·75 inch. Outer claw rather longer than the inner.

This description is taken from a fresh Hong Kong female specimen. The surviving Hong Kong male bird and the Swatow skin are each rather larger, with a longer and stronger bill and rather stouter legs. The last specimen has the wing 3 inches long, the transverse bars on the lower parts broader, and the throat whiter. It is in other respects similar to the Hong Kong female.

The ordinary note of my caged male is of a soft coaxing tone; but at daylight every morning, and at irregular intervals during cloudy weather, it bursts out with a loud song—*He-pe-péw,* which it repeats several times. In appearance it looks like a cross between *the* Quail and a *Turnix;* but its sternum is altogether that of a *Coturnix.*

At Amoy I saw a stuffed specimen of what I believe to be the true *Pelicanus onocrotalus.* It was much larger than the common *P. crispus**, and the elongated occipital feathers turned downwards, instead of curling upwards. The specimen was nearly mature, but without the fully developed crest of the nuptial season. It had been shot, a few weeks before, on the river near Amoy. Up the same river, on the 28th of January, a friend shot and gave me a fine specimen of the Marsh-Harrier. As this was the first instance of its occurrence in Amoy, I took pains to note down its appearance while in the flesh, and I here transcribe my note.

Circus æruginosus. Length 23·5 inches; wing 7·25 inches; tail 10·25 inches. Tarsi about 4 inches, feathered for more than an inch in front. Middle toe 2 inches; its claw 1 inch. Legs light clear yellow, with black claws. Apical half of bill blackish brown, basal part bluish-grey washed with yellow, more deeply on the culmen. Cere dotted with long vibrissæ, curved backward. Iris deep chocolate. Inside of mouth light greyish-indigo. General plumage chocolate-brown, with basal portions of the feathers white. Throat and sides of the cheeks, under the eyes, white. Head the same, washed with buff, and blotched and streaked. Scapulars with more or less white and reddish-buff. Inner web of outer quills margined on basal half with white, freckled with buff, and becoming browner on those approaching the humeral quills. The concealed white on the basal portion of many of the body-feathers washed with light chestnut. Extreme base of tail and quills, like that of most of the other feathers, pure white. The bird was infested with lice.

The Swatow specimen, before referred to, is paler, and has more white and chestnut about it.

At a Meeting of the Zoological Society, I was asked to give some account of the Red-legged Partridge of Tientsin. I had not then seen the bird. I have lately had the pleasure of observing a pair in a gentleman's aviary at Amoy, and I send you a slight sketch of them. They were brought down from Chefoo. They are certainly very like the Chukar (*Caccabis chukar*), but I have no proper description of that bird to which I can refer. I have asked my friend to get me some specimens, dead or alive, from Chefoo, and these I may be able to send home for identification. Meanwhile this note must serve.

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* *Vide anteà,* p. 111, *note.*—Ed.

Male rather larger than the female, and with a small blunt spur. In bulk about the size of a French Partridge (*Caccabis rufa*). Iris deep hazel. Legs and bill pink-red. A black line runs over the forehead, through the eye, round the ear-coverts, and, descending, unites with the corresponding one from the other side in a deep irregular point on the breast. In this black line, just behind the ear, there occurs a light chestnut spot. Prevailing plumage cinereous, purer on the head, rump, and tail, washed elsewhere with light chestnut. Supercilium, starting from just above the eye, white. Quills margined and greater wing-coverts tipped with the same. Flanks transversely banded with black, rich chestnut, and white. Rest of lower parts white, tinged with grey and light chestnut-buff. Sexes similar. Plumage compact and smooth.

This may be the bird which Temminck has noted from Japan as *Perdix rubra*. I can hardly believe it is the true Chukar, and should think it extremely likely it will turn out new.

On the 8th of December, I procured a fine male of *Euplocomus swinhoii* in beautiful plumage. It was brought to me from a distant station in the interior of this island, and I forwarded it to Hong Kong, whence it was shipped to Dr. Squire, at Calcutta, for the London Gardens. I trust it may arrive all safe. This bird is rare, and extremely difficult to procure, as the mountain travelling here is far from safe. My chief bird-hunter was nearly murdered and robbed of fifty pounds, the other day, while in search of Deer and this Pheasant. The mishap has quite crippled me for the present; but I am engaging another man, and hope to get additional specimens of this beautiful creature, as well as of some other of the choice novelties from this island, for transmission to England.

I have at last received the Sixteenth Part of Mr. Gould's 'Birds of Asia,' containing the Formosan series. I regret to see that in the fine plates no attention has been paid to the style of the scenery, a very correct idea of which might have been obtained from my figures of the aborigines, which were executed by an artist who had himself been here, and who inserted the landscapes from his own sketch-book. The grand mistake is the introduction in two of the plates of the cocoa-nut palm, which I had taken particular pains to explain was not indigenous to this country. About thirty miles off, we have lately discovered one solitary tree of this species; but it is the only known instance of its existence in the island, and was probably planted. The only palliation I can think of is the plea offered by the editor of a well-known illustrated newspaper in a similar case. A view taken at Peshawur, in the North-West Provinces of India, was sent him by an amateur artist for insertion. When it appeared in print, the landscape was found ornamented with a conspicuous cocoa-nut tree, not one of which grows in that region. The artist wrote to remonstrate with the Editor for not adhering faithfully to his original. The Editor replied that "the British public demanded a cocoa-nut!"

I am, &c.,
ROBERT SWINHOE.

Takow, Formosa, 1 April, 1865.

SIR,— . . . . . I ought to have to say something of the Swatow birds; for Consul Caine, at that port, still exerts himself in our cause; but, unfortunately, his parcel has this time miscarried. I must in consequence confine myself to Formosa. The last part of March has been unusually cool, with strong northerly winds, squalls, and cloudy weather. On the 22nd we were out for a long walk round Whaleback, an island-like hill in the broad alluvial plain between the high Apes' Hill and the inner mountain-range. This hill looks like a thick stratum of earth well tilted to the westward, about 600 feet high, the tilted side being abrupt and precipitous, and the back portion gently declining to the plain. The rock, in its formation, is of calcareous conglomerate, similar to that of Apes' Hill, and interlarded and stratified in like manner with clay. Its rocky front is studded with bushes and coarse vegetation, its back clothed with smooth grass. Round about are fields of young paddy, sugar-canes cut or ready for cutting, and fallows in process of preparation for further crops. Between it and Apes' Hill lies the old decayed walled town of Kooseah, with its poor straggling population and its curious central One-tree Hill (a good landmark), and several thriving sheltered villages with hedge-rows, formed chiefly of the screw-pine (*Pandanus*, sp.). To the right of Kooseah, and close to Whaleback, the easternmost of the creeks from our harbour terminates the lagoon in a marshy swamp. Such is a slight sketch of the country passed. From the young paddy we got *Rallus striatus*, and saw flocks of *Buphus coromandelianus* and *Herodias garzetta*, with occasional examples of *Ardetta cinnamomea*, *Butorides javanica*, and a few of *Egretta alba* with their bills still yellow. From the swamps we had *Gallinago scolopacina*, *Rhynchæa chinensis*, *Gallinula chloropus*, *G. phœnicura*, *Podiceps minor*, and *Gallinago stenura*. These last were common on grass-patches, nearly dry, where we also killed a *Gallinago solitaria*—an unusually early bird. In the fields under the harrow both *G. scolopacina* and *G. stenura* were common enough, often in "wisps," together with large flocks of *Charadrius longipes*. The ground here was quite dry. In the fields and hedge-rows we noticed *Turtur chinensis*, *T. humilis*, *Centropus affinis*, *Lanius shah*, *Oriolus chinensis*, *Myiagra azurea*, *Acridotheres cristatellus*, and *Pica media*. Of birds of prey we saw several—*Milvus melanotis*, *Tinnunculus*, sp.?, *Circus spilonotus*, *C. æruginosus* (it looked very like this species, but we did not procure it), *Accipiter nisus*, *A. gularis*, *Falco peregrinus*, and *F. subbuteo*. We saw also a small Hawk with a thick-set body, which I could not make out. At the foot of Whaleback we saw one Pheasant and one Button-Quail (*Turnix*, sp.), being all the true game we encountered in our long ramble. Large flocks of *Cypselus affinis* and *C. vittatus* darted over our heads for the greater part of the day. In a tree, some twenty feet from the ground, I found a nest of *Lanius shah,* the female sitting on five eggs.

On the 26th of March my hunter returned from the hills. He had penetrated no great distance, as his collection, consisting chiefly of birds of the plain, and containing no *Accipitres,* plainly showed. He brought, however, an extremely interesting species from the lower range. This was a *Munia,* of which there were several specimens both in young and old plumage, dead and alive. It is a new species, closely allied to *M. rubronigra* of Hodgson, but singularly differing from it in the occiput and nape being brown instead of a rich black, as are the other dark parts. This bird supplies another curious confirmation of what I have before stated as to the affinities of the fauna of this island with that of the Himalaya, rather than with that of China. It has the black ventral stripe of *M. rubronigra,* which is wanting in *M. sinensis.* I propose to call it

MUNIA FORMOSANA, sp. nov.

Similis *M. rubronigræ,* sed occipite nuchaque fuscis nec nigris.

Hab. In Formosa meridionali, ad montium pedes.

Adult. Above, sides of the breast and flanks chestnut. Forehead, face, and under-parts deep black, the former fading into brown on the occiput and nape. Lower rump deep glossy maroon. Upper tail-coverts and two central tail-feathers flammeous. Remaining tail-feathers light hair-brown, washed and edged with chestnut. Axillaries and basal edge of under-quills pale buff, the under-stems white. Edge of carpus beneath chestnut, marked with black. The chestnut on the breast forms a narrow belt. Bill cobalt-blue, deeper on the culmen and gonys. Irides deep rich brown. Legs and claws plumbeous, with light yellowish soles and bases. Length 4·25 inches; wing 2·12 inches; tail 1·5 inch.

Immature. Above light yellowish-brown, washed with chestnut on every part except the head. Under parts pale dingy buff. Some of the specimens are entirely in the young plumage, others show every step to maturity. The moult is probably completed before the bird begins to breed, and those in the youngest garb are doubtless the produce of late nests last year.

Amongst the ordinary birds brought, two specimens of *Lanius shah* had the frontal black mark reaching to beyond the centre of the crown, and an example of *Garrulax taivanus* had the tip of its upper mandible protracted about ·25 inch more than usual.

On the 30th of March, H. M. gunboat 'Flamer' returned to harbour, from a cruise after pirates, to Lung-kiaou Bay, forty miles south of this place. My interpreter, who accompanied this expedition, brought me a live Ground-Pigeon, of the genus *Chalcophaps*. This bird answers to the description of *C. indica* of India, rather than to that of *C. javanica* of the Archipelago (Bp. Consp. Av. ii. p. 91). The notable difference in our bird is in the colour of its under tail-coverts, which are black, while in the Indian they are greyish-brown varied with chestnut. I designate it as

CHALCOPHAPS FORMOSANA, sp. nov.

Similis *C. indicæ*, sed subcaudalibus nigris nec fusco-cinereo castaneoque variis.

Hab. In Formosa meridionali (Lung-kiaou).

Mantle beautiful bronze-green; basal and hidden parts of feathers, together with the quills, black. Outer shoulder vinaceous-brown, margined with grey, and tipped with white. Cheeks, sides of the neck, and breast fine vinaceous, becoming paler and tinged with grey on the under-parts. Crown of the head, streak down the occiput, and dorsal edge of the vinaceous bluish-grey, cinereous on the front and sides of the crown. The bluish-grey band unites one shoulder with the other. Forehead and thin streak over the eye white; chin very pale. Back greyish-black with two bands of pearly-grey, the lower one deepening into the blackish-grey rump. Tail-coverts broadly tipped with black. Tail purplish-black, the outer feathers on each side being marked with grey, somewhat on the inner web, and on the outer web for the greater part of its length. All the rectrices, except the central pair, with more or less bluish-grey. Under tail-coverts nearly the length of the tail, the shorter ones being blackish-grey, the longer purplish-black. Vent deep grey, with a vinaceous tinge. Axillaries bright cinnamon. Flank-feathers with white shafts, enormously thick and pointed. Bill with the basal third dull madder, the rest to tip light bright coral-red. Iris deep rich madder-brown. Rim round the eye and eyelid madder—nearly the colour of the base of the bill; legs almost the same, but rather redder, with pale, somewhat horn-coloured under-edges, soles, and claws, scutellations pale and distinctly marked. Tarsal joint bare. Length 9·5 inches. Bill from forehead ·62 inch, from gape ·87 inch. Wing imperfect, and therefore not measured. Tail 3·62 inches, and wedge-shaped. Tarsus 1·1 inch; middle-toe and claw 1·1 inch. The specimen, a male, with well-developed testes.

A few small parties of *Hetærornis sinensis* have been about for the last day or two, probably driven by the late gales from their usual route of migration up the mainland of China. They do not appear to summer in Formosa. A few couple of *Lobipes hyperboreus* have also been seen. The first pair I watched from the point looking to seaward, just outside the mouth of the harbour. They were floating close together in a chopping sea, and breasted the breaking ripple with great ease and unconcern. I sent a boat and some men after them, but she was so unsteady that the first four shots missed. The birds did not get frightened at the report, but swam nearer to each other, when the fifth barrel put an end to their existence. The next day (30th March) I saw a pair busily engaged in feeding inside the harbour, on some straw and filth thrown from a junk. These were just as fearless, and we easily procured them. One had the maggot of a blow-fly sticking in his throat. All four birds were in winter-plumage, with just a sign here and there of the coming nuptial tints.

My list of rarities for the month of March closes with an

ARDEA GOISAGI, Temminck.

I procured it from a fisherman, who had caught it on the sands close to this port. This is the first instance of its occurrence here, and at Tamsuy I only procured it once. If indigenous to the island, it would appear to be extremely rare.

Blyth identifies *A. melanocephala*[*], with this bird. I subjoin a short note on the specimen procured, *Ardea* (*Gorsachius*) *goisagi*:—Crown and occiput without crest, each feather marked along the middle with black. Only the first quill-feather tipped with white. Iris dark straw-colour. Bill bluish-black, base of its lower mandible light greenish horn-colour. Cere and naked skin of the face greenish-yellow, inclining to black on the eyelid. Legs olive-yellow, soles dingy; claws brown, the middle one pectinated with broad teeth. Length about 19 inches; wing 10·75 inches. Bill from forehead 1·62 inch, from gape 2·37 inches. Tail, of twelve feathers, somewhat wedge-shaped, 4·5 inches. Tarsus 2·7 inches. Middle toe and claw 2·25 inches. Outer toe rather longer than the inner. Large testes on dissection. The whole plumage of the bird about three parts advanced to maturity.

I am, &c.,
Robert Swinhoe.

Sir,—I have a few remarks to offer upon Lord Lilford's interesting "Notes on the Ornithology of Spain," contained in your last Number.

Reference is there made (p. 172) to two specimens of *Aquila nævioides* received by Mr. Gurney from Spain, and placed in the Norwich Museum. As I believe them to be the only authenticated European examples of this bird existing in this country, it is perhaps advisable that some further information should be given of the manner in which they were obtained. In the course of a hasty journey through Spain in 1861, of which I have given an account in the second series of Mr. Galton's 'Vacation Tourists,' I made the acquaintance of Dr. Reinhold Brehm, who was then resident at Madrid, and had the pleasure of inspecting a fine series of rapacious birds obtained by him in the vicinity of the capital. Among them were skins of a supposed new species, which he had named *Aquila adalberti*[†]. Two of these were subsequently acquired by Mr. Gurney, with whom I put Dr. R. Brehm in communication, and are the specimens now in the Norwich Museum. I believe this to be the first, if not the only, authenticated instance of the occurrence of *Aquila nævioides* in Europe.

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[*] Apparently a *lapsus calami* for *A. melanolophus*. But see Mr. Blyth's remarks in our Number for January (p. 38).—Ed.

[†] They are described under this name by Dr. Ludwig Brehm in an

I am, Sir, yours obediently,
P. L. Sclater.

Sir,—As you express a doubt, in your editorial note to Mr. A. G. More's paper on the "Distribution of Birds" (Ibis, 1865, p. 9), whether the Osprey (*Pandion haliæetus*) has bred in Scotland for more than ten years, I am happy to be able to inform you that this interesting species still breeds regularly every season at a locality in Inverness-shire, which, for prudence sake, I forbear to name.

Lord Hill informs me that he has had the young birds sent to him from that quarter for several years, but that finding it is quite impossible to rear them, he has for the last season or two requested that they might be left undisturbed.

I remain, &c.,
John Rocke.

Clungunford House, Shropshire,
June 10th, 1855.

Priory Hill, St. Neot's, Huntingdonshire,
June 21st, 1865.

Sir,—I have this season received, or myself taken, many Cuckoo's eggs, the particulars of which confirm the remarks I made in the last Number of the 'Ibis.' One, I think, deserves notice. The nest of a Pied Wagtail (*Motacilla yarrelli*) was placed on a pollard-willow over the Ouse; and when looked into at a quarter before six o'clock on the morning of May 1st, it contained two Wagtail's eggs. By a quarter before six o'clock the same evening a Cuckoo's egg had been added. This was taken out by the finder, and the next morning early the Wagtail laid a third egg, after which the nest was brought to me.

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article upon Eagles, in the 'Bericht über die XIII. Versammlung der Deutschen Ornithologen-Gesellschaft zu Stuttgart' (pp. 55-62).

This fact, taken in connexion with my observations of 1864 (recorded at page 186), gives from May 1st—instead of May 5th—to July 19th as the period during which *Cuculus canorus* lays its eggs.

I now always instruct my collectors to search in the grass or weeds under the nest for the eggs turned out by the Cuckoo, and in two instances I myself have found them uninjured. From this circumstance I am inclined to believe that the Cuckoo does not suck eggs. At all events it is clear that she does not make use of them as food. I have never, it is true, seen her in the act of turning out any; but I cannot believe that the parent-bird is the agent in this process, and am quite convinced that the Cuckoo is. I remain, &c.,

GEO. DAWSON ROWLEY.

From information contained in a letter from Dr. Giglioli, kindly communicated to us by Dr. Sclater, we understand that Dr. Salvadori, whose name is well known to the readers of 'The Ibis,' has now in preparation a general work upon the Italian avifauna, which we are sure will prove an acceptable addition to our knowledge of the birds of Italy; for we are not aware that any book on the ornithology of that peninsula as a whole has appeared since the completion, now more than twenty years since, of Prince Charles Lucien's costly, and therefore rare, 'Iconografia della Fauna Italica.' From the same source we learn that the same gentleman, who has lately been putting in order the ornithological collection of the University of Turin, has found, among other interesting specimens in it, one of *Hypsipetes niveiceps,* described by Mr. Swinhoe in 'The Ibis' for last year (p. 424). We also hear that Professor De Filippi, the energetic director of the same museum, has lately acquired two splendid examples of another of Mr. Swinhoe's discoveries—*Crossoptilum mantchuricum,* which were sent over by a missionary from the neighbourhood of Pekin.

Pastor Theobald writes to us from Copenhagen that he and his friends have again this year succeeded in obtaining eggs of *Nucifraga caryocatactes* from the island of Bornholm. Two nests were found, containing respectively three and four eggs, which are exactly like the ones first procured thence, which we mentioned in our last number (p. 226). The Nutcracker mystery may therefore now be safely regarded as settled.

When, more than a year ago, we undertook to edit this Journal, it was pressed upon us by some of our friends, whose opinion deservedly carried very great weight, that we should in future, at the end of each volume, insert a diagnostic list of all the species which had been described as new during the preceding year. Our friends urged, and with great truth, that such an addition to the many excellent papers with which we are favoured by some of the best working ornithologists of the day, would make 'The Ibis' still more useful to all lovers and students of the science, but especially to those who are resident abroad, and cut off from other sources of information as to what was doing at home. To this application we consented, though well aware not only of the large amount of additional labour which the drawing up of such lists would inflict upon us, but also of the fact that these lists alone would give but a very imperfect notion of the progress of ornithology during the periods to which they would refer; for it has already often happened, and in the present state of our science it must continue to happen still oftener, that the most important discoveries in ornithology consist not merely in the characterizing of new, or apparently new, forms, but rather in the bringing together by identification of two or more known species which have been described by different authors at different times. The execution then of the first of these objects, however useful its results, while the second and more important one was to be left untouched, would have been very unsatisfactory to us, while the carrying out of both would have swelled this Journal to a bulk not contemplated in our arrangements, and that by the addition of matter which, to some of our readers, would certainly not have been of a very attractive nature.

It was therefore with great pleasure that a few months since we found that our good friend and contributor, Dr. Albert Günther of the British Museum, had in view a scheme for the publication of an annual volume, which would give English zoologists the same advantages as their German brethren had long derived from the time-honoured work known as "Wiegmann's Archiv." Consequently when Dr. Günther invited us to execute that portion of the undertaking which referred to the class *Aves,* we felt we could not decline a task which we believed would be of such benefit to the numerous ornithologists of this country, as well as to those of foreign nations acquainted with the English language. It was plain that the opportunity we had long sought had now presented itself, for, in a work especially devoted to the subject, we should be able to treat the cotemporary literature of our science at a length and with an attention to detail which, as we have before said, would have been quite impossible if the summary were to be embodied in, or appended to, 'The Ibis.'

Without affectation of modesty, we may be allowed to say that our own unfitness for the task was our chief misgiving. The readers of this Journal generally were unconscious of our original intention, as stated above, and the few to whom it was known would not, we were confident, regret our co-operating in an undertaking which, if successful, cannot fail to render them some service. On this score therefore there was no need for hesitating. But the ornithological world has been long accustomed to the yearly 'Bericht' of Dr. Gustav Hartlaub, and it is a serious matter for any one else to come forward on a stage where he has been for nearly twenty years the sole actor, so that we trust our own want of experience will in this case be kindly taken into consideration by our friends. We have now to announce the immediate publication of THE RECORD OF ZOOLOGICAL LITERATURE, and to say that in that portion of it which comes from our pen we have endeavoured to do justice equally by the authors from whose labours it is compiled and the public for whose use it is intended. We are sensible of its many imperfections, but we trust that its faults are of such a nature as the kind assistance of our fellow-ornithologists will in future enable us to amend. In particular, we would earnestly request that early notice of all ornithological publications may be sent to us, while we can confidently assure our present readers that, as we now have an additional reason for becoming intimately acquainted with the contents of every paper bearing upon ornithology, our studies on behalf of the new 'Record' must necessarily be rather beneficial to 'The Ibis' than the contrary.

It is with no common feeling of regret that we have to place on record the deaths of two men who have been so actively devoted to the pursuit of zoology as Charles Waterton and John Richardson. The first expired from the effects of an accident at his well-known seat, Walton Hall, on the 27th of May, being then in the *eighty-fourth* year of his age. It is unnecessary for us to comment on the career of Mr. Waterton. He has left us an 'Autobiography' which supplies all that could be said on the subject, and the incidents of his life have been better told by himself than they could be by another. It is only to be deplored that the bulk of his observations are rendered practically useless by his systematic disregard of any precise nomenclature—that which can alone make (as it is alone its use) such observations available to others. But we believe it is still within the power of a warm admirer of the deceased naturalist to render a very great service to his memory. If any careful ornithologist were to go over Mr. Waterton's beautifully-mounted collection of birds, with the "Wanderings" and "Essays" in hand, he might be able to refer most of the specimens to the passages which mention them, and by publishing a catalogue establish, and preserve to all time, the desirable connexion between both, which is on the point of being irrecoverably lost. Unless this is done, Mr. Waterton's works will in future serve as now to amuse the reader by the brilliancy of their language, but, except in occasional instances, they will scarcely instruct him.

Sir John Richardson died at Grasmere on the 5th of June, aged *seventy-seven.* Though less addicted to ornithology than to several other branches of science, his share in the second volume of the 'Fauna Boreali-Americana" has long been highly appreciated. His active and laborious life deserves, and will doubtless obtain, the recognition of a memoir, which can hardly fail to do justice to the heroism and talents displayed by so intrepid an explorer and practical a naturalist.

THE IBIS.

NEW SERIES.

No. IV. OCTOBER 1865.

XXXII.—*On the Pigeons of the Malay Archipelago.* By Alfred R. Wallace, F.Z.S., &c.

(Plate IX.)

The two most remarkable and most isolated groups of fruit-eating birds—the Parrots and the Pigeons—attain their maximum development, as regards beauty, variety, and number of species, in the same limited district, of which the great island of New Guinea forms the centre, and which I have proposed to call the Austro-Malayan subregion. It extends from the island of Celebes on the west to the Solomon Islands on the east, and includes the Moluccan and Timor groups. Its actual land-area is less than one-sixth that of Europe, yet it contains more than one-fourth of all the species of Pigeons that are known to exist. The islands west of Celebes, as far as Malacca and the Nicobar Islands and including the Philippines, are also rather rich in this family of birds. They form the Indo-Malayan subregion; and by combining the two we have in the Malay Archipelago considerably more than one-third of all the Pigeons that inhabit the earth. We can only vaguely speculate on the causes that have led to this peculiar distribution, since it would seem, at first sight, that the forests of Africa, of India, and especially of South America, would be equally well adapted to the development and support of these beautiful birds; and the fact that fruit-eating birds, as a whole, are more abundant in South America than in these islands, proves that their comparative scarcity cannot be attributed to a deficiency of appropriate food. It is to be noted, however, that the most striking superabundance of Pigeons, as well as of Parrots, is confined to the Austro-Malayan subregion, in which, although the most luxuriant forests everywhere clothe the country, and fruit-bearing trees, especially those of the Fig tribe, are very abundant, yet all the forest-haunting and fruit-eating mammals, such as Monkeys and Squirrels, are totally absent. But Monkeys, besides consuming vast quantities of fruit, are exceedingly destructive to eggs and young birds; and Pigeons, which build rude, open nests, and whose young are a long time helpless, must be more particularly exposed to their attacks. This is no doubt the reason why, in the dense forests of the Amazon, where Monkeys are most abundant, Pigeons are scarce or almost entirely absent; and in South America generally, it is to be observed that by far the larger number of the Pigeons inhabit the districts where Monkeys are almost or quite wanting—the mountains of Chili and of Mexico, the open plains of the Orinoko and La Plata, and the savannas of Central Brazil. The South American Pigeons are mostly ground-feeding species, and build in low bushes and thickets to which Monkeys rarely descend. In India and Africa, where Monkeys, especially the smaller kinds, are less abundant, true fruit-eating Pigeons occur, feeding and building on lofty trees, and protected to some extent by the green tints of their plumage. They form, however, in these countries but a small portion of the group, whereas more than two-thirds of the Pigeons of the Malay Islands are fruit-eaters of the genera *Treron*, *Ptilonopus*, and *Carpophaga*, which never descend to the ground, and are true denizens of the dense virgin forests. We may also remark that in these regions there are no great families of fruit-eating *Passeres* like the Tanagers and Chatterers of tropical America, whose place seems to be in some measure supplied by the Fruit-Pigeons, which, being generally larger birds, consume a vast quantity of fruit. The great development and rapid increase of these, unchecked by the competition of fruit-eating mammals, or by the attacks af arboreal carnivora, would perhaps, in the struggle for existence which is always most severe between creatures of a similar mode of life, prevent the increase of the smaller fruit-eaters; and we may thus understand how it is that in many of these islands Parrots and Pigeons form such a large proportion of the avifauna, and are by far the most prominent and characteristic of the living creatures that inhabit them.

The classification of the Pigeons is a very difficult subject, and can probably only be satisfactorily effected by an examination of the anatomy of all the genera. They may, however, be very conveniently grouped into three great families:—1st. The *Treronidæ*, or Fruit-Pigeons, which have short legs with broad-soled, grasping feet, feed entirely on fruits, and never descend upon the ground; 2nd. The *Columbidæ*, or true Pigeons and Doves, which have larger feet and slenderer toes, and feed either on trees or on the ground; 3rd. The *Gouridæ*, or Ground-Pigeons, which have generally longer legs, feed always on the ground, run quickly, and only ascend trees to roost.

The *Treronidæ* are entirely confined to the eastern hemisphere. A few species of the genus *Treron* are found in Africa, but the greater portion inhabit India and the western Malay Islands. These are beautiful birds, almost always of a yellowish or ashy-green colour, variegated with patches of bright yellow, purple, or chestnut, which are less vivid or altogether absent in the females. This genus may be considered to be almost confined to the Indian region, fourteen species occurring in India, ten in the islands of Java, Sumatra, and Borneo, and three in the Philippines; but on passing into the Australian region they diminish rapidly, two, which scarcely differ from those in the other islands, being found in Celebes, one in the Moluccas, and two in the islands between Java and Timor. In the next genus, *Ptilonopus*, the distribution is reversed, since New Guinea is their metropolis, whence they diminish in every direction, only one species occurring in Borneo and Sumatra, and the utmost limits of the genus being reached in the southern part of the Malay peninsula. In the Pacific islands and in the Moluccas they abound, many even of the smallest islands having their peculiar species. These are the smallest and most beautiful of the Fruit-Pigeons; their ground-colour is generally of a rich grass-green, diversified with bands and spots, caps, and shoulder-patches of the most vivid colours—crimson, pink, purple, white, or yellow in endless diversity. The genus *Carpophaga*, on the other hand, comprises the giants of the family. They also have their metropolis in New Guinea, but they extend further westward, two species occurring in India. Some of these birds have a deep booming note, which might almost be taken for the roar of a wild beast. Their gape and throat are so extensile that they can swallow very large fruits. In the Moluccas they devour the nutmegs, as soon as the fruits open, for the sake of the mace, which is digested off in the bird's stomach, and the seed disgorged entire.

Looking at the whole family of Fruit-Pigeons, we find that fifty-four species are confined to the Austro-Malayan subregion, while twenty-eight inhabit the Indo-Malayan district, only three species (one of each genus) being common to the two. Beyond the Archipelago, fourteen species (all of the genus *Treron*) are found in India, and six of the same genus in Africa; thirty (of the genera *Carpophaga* and *Ptilonopus*) inhabit the various islands of the Pacific, and eight have been found in Australia and New Zealand. Even with our present imperfect knowledge of New Guinea we have fourteen species from that island, a larger number than are known to inhabit any other single tract of land, and plainly marking it out as the focus of the group. Of all the other islands Celebes is by far the richest in Fruit-Pigeons, containing ten species, seven of which are peculiar to it.

The family *Columbidæ* is chiefly represented in the Archipelago by the genus *Macropygia*, which extends from the Himalayan Mountains to Australia and the Pacific Islands. Rarely is more than a single species found in any island, except in Java, which has three if not four species, and may therefore be considered the headquarters of the genus. These birds feed on the ground or on low bushes; and all are more or less of a chestnut-brown colour, and have long and graduated tails. They are of a weak structure and seldom take long flights. *Turacœna* and *Reinwardtœna* are two genera so closely allied to *Macropygia* that they have been often combined with it. The former, however, is characterized by the shorter tail, the bare orbits, and the black colour of the plumage. Three species only are known, which are widely scattered over the Austro-Malayan subregion, though each species is very local—one being confined to Celebes, another to Timor, and the third to the Solomon Islands. In the Moluccas, which occupy the space between the widely scattered localities of *Turacœna,* is found the single species of *Reinwardtœna,* which has a much stronger bill and longer tail, and has the whole under surface white, while the back is rich brown. The presence of these birds, so closely allied to *Macropygia,* in the Austro-Malayan subregion only, would lead us to suppose that this peculiar form of Pigeon is really most characteristic of that district, and that the preponderance of the species of *Macropygia* in Java is only due to some favourable local conditions. The beautiful metallic Pigeons forming the genus *Ianthœnas,* and which seem to form a transition from the Macropygiine form to that of the true Pigeons, are found also in the Moluccas, New Guinea, and Timor, extending to the Pacific islands, and one species to Japan. The old-world genus *Turtur* has a few representative species in the Indo-Malay islands, but does not properly extend to the Australian region, as only stragglers have reached Timor along the chain of islands from Java, and those found in the Moluccas may perhaps have been introduced, as they have not extended to the easternmost islands or to New Guinea.

The *Gouridæ,* or Ground-Pigeons, seem especially to abound in the Australian and American regions. Of the seven genera found in the Archipelago only two extend on to the continent of Asia (one species of each), while five are confined to the Austro-Malayan subregion and three to New Guinea, and several other peculiar genera inhabit Australia and the Pacific islands. Of the seventeen or eighteen species in the Archipelago no less than fourteen inhabit the Austro-Malayan subregion, and seven are found in New Guinea itself, although so little is yet known of that great island. Some of these are among the most remarkable of Pigeons. *Trugon terrestris,* by its stout hooked bill and strong legs, shows some approach to the wonderful *Didunculus,* the existing representative of the Dodo.

Henicophaps has a long, straight, and powerful bill, like that of some of the larger Plovers. *Calœnas nicobarica* I believe to have spread westwards from New Guinea as far as the island where it was first found and from which it has derived its name. It has a massive body, with immense pectoral muscles, and very stiff and ample wings, and is thus capable of passing from island to island; and it is a remarkable fact that it is found almost entirely on small uninhabited islands, scattered at intervals over the four thousand miles of ocean between New Ireland and the Nicobar Islands. Over this wide range it presents no perceptible differences of form or colouring, which may be considered to indicate that migration still takes place at intervals, and by crossing the breeds in distinct islands, checks the formation of local races. *Phlegœnas* is another beautiful genus, scattered sparingly over a wide area; but here each island has a distinct species, showing that the causes that once favoured the distribution of the form have now ceased to act. Accordingly we find these birds to have a much weaker structure than *Calœnas*, and limited powers of flight. The magnificent Crown-Pigeons, the largest and most majestic of the whole order, are confined to the Papuan islands, where they take the place of the Curassows of South America. I have often seen these fine birds walking along the forest-paths in New Guinea, where the absence of carnivorous mammals, and the scarcity of large reptiles and of birds of prey, permit them to multiply unmolested. When disturbed, they fly up into the lowest branches of the nearest tree, in which situations they roost; but they spend the greater part of the day upon the ground, feeding on fallen fruits. The *Geopeliæ* are small, long-tailed Ground-Doves closely resembling Turtledoves in appearance, but having their nearest allies in several Australian species. They appear to have passed from Australia into Timor, and thence along the chain of islands into Java, as they are not found in any of the other parts of the archipelago. The green Ground-Doves of the genus *Chalcophaps* are the only ones which have a more extended distribution. All the species, however, are very closely allied; and the one which is found in India is so very similar to that of the western Malay islands, that its extension on to the continent may probably not have been of very ancient date. Indeed we have so many instances of the larger animals multiplying rapidly and becoming thoroughly acclimatized in countries very remote from their original home and often differing very widely from it in physical conditions, that I should be inclined to think that in this case, as in many others, the distribution of species has been modified by the agency of man. From a very remote date there must have been communication between Java and India, since the Hindoo religion had been established in the island for an unknown period when it was subverted by Mahommedanism in the fifteenth century; and it is highly probable that a bird so beautiful, and so easily caught and preserved, as the *Chalcophaps javanica,* should have been often carried to the continent, where a few escaping would soon stock a wide extent of country. The fact of this being the only Ground-Dove in all India, and that it so closely resembles the Javan bird that great doubts are entertained of its specific distinctness, renders the supposition of its recent introduction highly probable, since, in most other cases, the species of Java and those of India offer well-marked differences.

If we now turn from the consideration of the separate families, genera, and species to the distribution of the Pigeons as a whole, we shall discover facts not less interesting. The total number of Pigeons now known to exist is about three hundred, or perhaps a few more; and of these the Malay Archipelago possesses no less than one hundred and eighteen. This number will seem especially large if we compare it with that representing the species of Pigeons in other countries. According to Jerdon's work on the Birds of India, only twenty-eight Pigeons are found in that country, exclusive of Ceylon and the countries east of the bay of Bengal. Australia possesses twenty-three species, Africa less than forty, while the vast continent of America has not more than eighty of these beautiful birds. These numbers show that the Malay Archipelago is preeminently the metropolis of the Pigeon tribe. It is now well known, however, that this part of the world belongs to two distinct zoological regions—the Indian and the

Australian: and in these the Pigeons are very unequally distributed; for the western and larger portion (the Indo-Malayan subregion) contains nine genera and forty-three species, while the eastern and smaller portion (the Austro-Malayan subregion) has fifteen genera and eighty-four species. Here, therefore, the species of Pigeons become more condensed and more varied than in any other part of the globe: here is the focus of the order; and it was probably from this part of the world that the original dispersal and modification of the group chiefly took place. This condensation is carried to its greatest height in New Guinea, in which, although only a few points on its coast have been visited, no less than twenty-five species of Pigeons have been obtained.

I believe, therefore, that the distribution of Pigeons in the Malay Archipelago fully confirms the results I have already arrived at from the study of other groups of birds, mammalia, and insects. These are, briefly, that this district is not one of the primary divisions of the globe, but that while one-half of it belongs to the Indian region, the other forms part of that of Australia; that the whole district may be further divided into groups of islands, the productions of which have a very close affinity—the Moluccan group being a satellite of New Guinea, while the Timor group is more closely connected with Australia; that Celebes is a very isolated and remarkable island, which, from the variety and peculiarity of its productions, appears to be the remnant of some more extensive land, which existed anterior to the present distribution of land and water in the surrounding regions; and that New Guinea must be looked upon as the remnant of a vast continent, now sunk beneath the waves of the Pacific. We find, also, that among the Indo-Malay islands (Sumatra, Java, and Borneo) Java is far the most isolated, possessing a considerable number of species peculiar to itself, while almost all those of Sumatra and Borneo are common to those two islands. We learn from this that what at first sight seems a very probable tradition of the Javans, the very recent separation of their island from Sumatra, is the reverse of truth since the evidence of the distribution of the *Pittidæ*, of the Parrots, and of the Pigeons among birds, of the Squirrels among mammals, and the *Papilionidæ* among insects, distinctly proves that, while all these islands have at no very remote geological epoch been united to the continent, yet the separation of Java was the earliest event, long subsequent to which a land communication existed between Sumatra and Borneo, although a far wider sea now separates them than the narrow strait which divides Sumatra from Java.

In the following list of the Malayan species of Pigeons, which I have endeavoured to make as complete as possible, I have thought it necessary to refer, in most cases, only to Bonaparte's 'Conspectus,' where a full synonymy is given, and to a good figure. Wherever practicable, I have given the colour of the eyes, bill, and feet from my own notes, as well as the dimensions, taken in the flesh and thus indicating the true size of the bird. For the localities I have chiefly depended on my own observations, indicated by "(*Wall.*)" after the names of places where I myself observed the species; but I have also given such other localities as appeared to me trustworthy, with an indication of the authority. I have added a list of such Indian and Chinese species as belong to genera occurring in the Malay islands. Descriptions of four species, which seem to me to require separation, have been given, and a few notes on habits and synonymy are occasionally inserted. The table of the distribution of the species has been found useful in the preceding generalizations, and will enable the ornithologist to see at a glance what species have as yet been ascertained to inhabit each island. I have adopted the limits of the Archipelago which are pointed out in my paper "On the Physical Geography of the Malay Archipelago," printed in the Journal of the Royal Geographical Society for 1863.

Order COLUMBÆ.

Family TRERONIDÆ. Fruit-Pigeons.

TRERON, *Vieill.*

(*Sphenocercus*, Gr.)

1. TRERON OXYURA, Reinwt.; Pl. Col. 240; Bp. Consp. ii. p. 8. *Hab.* Malacca, Java, Borneo (*Bp.*).

This appears to be a rare species, as I never obtained a specimen.

2. Treron korthalsi, Bp. (*Sphenura,* Temm.), Consp. Gen. Av. ii. p. 9.

Hab. Malacca, Sumatra (*Bp.*), Java (*Wall.*).

I found this species on the mountains of Western Java, at an elevation of 8000 feet. Iris dark; bill lead-colour; feet red. Three Indian species are allied to these, but are sufficiently distinct, viz.,

(1) *T. apicauda,* Hodg.; allied to *T. oxyura.*
(2) *T. sphenura,* Vig.; allied to *T. korthalsi.*
(3) *T. phasianellus,* Blyth.

Two other species occur in islands beyond the Archipelago, viz.,

(4) *T. formosæ,* Swinhoe, in the Island of Formosa.
(5) *T. sieboldi,* Temm., in Japan.

(*Osmotreron,* Bp.)

3. Treron viridis, Scop. (Briss. i. p. 143, *C. viridis philippensis.*) *T. vernans,* Gm.; Bp. Consp. ii. p. 12.

Hab. Philippine Islands (*B. M.*); Penang (*Wall.*), head darker; Sumatra (*Wall.*); Borneo (*Wall.*), head paler; Macassar (*Wall.*), front and throat greenish.

Iris pale pink, with inner ring of blue; bill bluish, base yellow; feet pinky red; bare part of orbits dusky lead-colour. Length 10½ in.

4. Treron axillaris, Bp. (*ex* Gray), Consp. Gen. Av. ii. p. 13. *Columba aromatica,* Gm.; Bp. Icon. Pig. pl. 6.

Hab. Philippine Islands.

5. Treron aromatica (Gm.). "*Columba viridis Amboinensis,*" Briss.

Hab. Bouru, Amboyna (*Wall.*). See Proc. Zool. Soc. 1863, p. 33.

Bill, cere, and eyelids pale dull blue; tip of bill, in dry specimens, yellowish; iris white; feet dusky purple. Total length 11½ in.; wing 6 in.

6. TRERON FULVICOLLIS (Wagl.), (*cinnamomea,* Temm.) Knip, Pig. 1, t. 6; Bp. Consp. ii. p. 14 (*tenuirostre,* Eyton).

Hab. Borneo, Malacca (*B. M.*), Philippine Islands (*Bp.*), Borneo (*Motley*), Sumatra (*Wall.*).

Bill red at base, tip greenish horn-colour; iris lilac-pink; eyelids ochre-yellow; feet pink red. Length 10½ inches.

Female. Dusky green above, yellowish green beneath; top of head purplish ash.

7. TRERON OLAX, Temm. Pl. Col. 241, ♂; Bp. Consp. ii. p. 15.

Hab. Java (*Bp.*); Sumatra, Malacca (*Wall.*).

Iris white; bill pale greenish horn-colour, base pale olive; feet coral-red. Length 9¾ in.

The species of this group inhabiting other districts are—

(6) *Treron bicincta,* Jerd. (ii. p. 449). India, Ceylon, and Tenasserim.

(7) *Treron malabarica,* Jerd. (ii. p. 450). Peninsula of India.

(8) *Treron phayrei,* Blyth (Jerd. ii. p. 451). Assam, Burmah.

(9) *Treron flavogularis,* Blyth (Jerd. ii. p. 452). Ceylon and Southern India.

(10) *Treron chloroptera,* Blyth. Nicobar Islands.

(11) *Treron pompadora,* Gm. Ceylon.

The next group (*Crocopus,* Bp.), with yellow feet and pointed primaries, has no representative in the Malay islands. The species yet described are—

(12) *Treron phœnicoptera,* Lath. (Jerd. ii. p. 447). North India and China.

(13) *Treron viridifrons,* Blyth. Burmah and Tenasserim.

(14) *Treron chlorogaster,* Blyth (Jerd. ii. p. 448). Ceylon and Indian Peninsula.

(*Treron,* Vieill.)

8. TRERON PSITTACEA, Temm. Pig. t. 4; Bp. Consp. ii. p. 10.

Hab. Timor (*Wall.*).

Iris orange-buff; bill pale greenish, bluish at the base; orbits bare, blue and greenish; feet purple. Length 12½ inches. Sexes alike.

In Bonaparte's character of the restricted genus *Treron,* he says, "remigum tertia margine integro." This is an error, as the third quill is quite as much sinuated or scooped out as in the other members of the genus. He begins his description of this species with the word "*Minor,*" which might lead one to suppose that it is a small species, whereas it is really one of the largest of the genus, and only inferior to *Butreron capellii,* which precedes it in the 'Conspectus.'

9. Treron floris, Wall. Proc. Zool. Soc. 1863, p. 496.
Hab. Flores and Solor Islands (*Wall.*).

Bill greenish lead-colour, with the tip yellowish; orbits bare; feet red. Length 11½ in. Sexes nearly alike.

10. Treron griseicauda (Wall. *ex* G. R. Gray), Proc. Zool. Soc. 1862, p. 344. *C. curvirostra,* Vieill.; Bp. Icon. Pig. pl. 6.
Hab. Sulla Island and Celebes (*Wall.*).

Bill pale yellow green, the base dark olive-green; iris red; orbits bare green; feet red. Length 10¼ in. Sexes differ.

11. Treron pulverulenta, Wall. 'Ibis,' 1863, p. 319.
Hab. Java (*Wall.*).

Iris orange-red; orbits bare, yellow; bill, base dark greenish, tip yellowish white; feet purple-red. Length 11 in.

(*Toria,* Hodgs.)

12. Treron nepalensis, Hodgs.; Bp. Consp. ii. p. 11.
Hab. Sumatra (*Wall.*), Nepal, Assam, Tenasscrim, Malay Peninsula.

Bill pale yellow, base deep red; iris golden orange; face and orbits bare, yellowish pea-green; feet rich carmine red. Length 10¼ in.

The North-Indian specimens have the bill rather stouter, and the basal portion of a duller red, and more swollen.

13. Treron nasica, Schleg. Ned. Tijdschrift, 1863, p. 67.
Hab. Sumatra (*Wall.*).

Iris golden orange; bill greenish white, base dark olive; feet dull pinkish purple. Length 11 in.

N.B. This is most probably the *Columba curvirostra* of Gmelin; but as it now seems impossible to determine what that species really was, it will be necessary to expunge the name altogether from our lists. The locality given for it, Tanna, one of the Pacific Islands, is certainly wrong, as the whole group (genus or subfamily) to which it belongs is essentially Asiatic, extending to Africa, but not beyond the Moluccas eastward.

(*Butreron*, Bp.)

14. TRERON CAPELLII, Temm. Pl. Col. 143; Bp. Consp. ii. p. 9.

Hab. Malay Peninsula, Sumatra (*Wall.*); Java (*Bp.*).

Bill greenish white, base olive-green; iris dark ash; orbits slightly bare, yellow-tinged; feet chrome-yellow. Length 15 in.

PTILONOPUS, Sw.

A. First primary abruptly attenuated at the end.

a. Tail-feathers fourteen (not twelve, as stated by Bonaparte); size large; tail long, even. (*Leucotreron*, Bp.)

15. PTILONOPUS CINCTUS, Temm.; Knip, Pig. i. t. 23; Bp. Consp. ii. p. 15.

Hab. Timor (*Wall.*).

Bill ochre-yellow, greenish at base; feet red; iris red. Sexes alike.

16. PTILONOPUS ALBOCINCTUS, Wall. Proc. Zool. Soc. 1863, p. 496, pl. 39.

Hab. Flores (*Wall.*).

Bill greenish at base, yellow at tip; feet bright red. Length 12½ inches.

17. PTILONOPUS GULARIS, Quoy & Gaim. Voy. Astr. t. 29; Bp. Consp. ii. p. 15.

Hab. Menado (North Celebes) (*Wall*).

Bill yellow; feet red; iris orange-brown; eyelids and orbits bare, blue.

18. PTILONOPUS LECHLANCHERI, Bp. (*Trerolæma lechlancheri*, Bp. Icon. Pig. pl. 16. (*Carpophaga*, pt., Gr.)

Hab. New Guinea.

b. Size moderate; tail shorter; tail-feathers 14.

* Tail rounded. (*Rhamphiculus*, Bp.)

19. PTILONOPUS OCCIPITALIS, Gray, Genera of Birds, ii. p. 467, t. 118.

Hab. Philippine Islands.

20. PTILONOPUS HUGONIANUS, Schlegel, Ned. Tijdsch. v. d. Dierkunde, 1863, p. 60.

Hab. Philippine Islands.

21. PTILONOPUS JAMBU, Gm.; Knip, Pig. i. t. 27; Bp. Consp. ii. p. 17.

Hab. Malacca (*Wall.*), Borneo (*Motley*), Sumatra (*Bp.*).

Bill bright yellow; feet dark red.

** Tail square.

22. PTILONOPUS IOZONUS, G. R. Gray, Proc. Zool. Soc. 1858, p. 186.

Hab. Aru Islands (*Wall.*).

Bill yellow, base above and feet purple red; iris white. Sexes alike.

23. PTILONOPUS HUMERALIS, Wall. Proc. Zool. Soc. 1862, p. 166, pl. 31.

Hab. Salwatty and New Guinea (*Wall.*).

*** Size small; bill small; tail somewhat rounded. (*Cyanotreron*, Bp.)

24. PTILONOPUS CORONULATUS, G. R. Gray, Proc. Zool. Soc. 1858, p. 185, pl. 138.

Hab. Aru Islands, New Guinea (*Wall.*).

Bill greenish yellow; feet red; iris orange.

N.B. New Guinea specimens have the crown a paler violet.

25. PTILONOPUS PULCHELLUS, Temm. Pl. Col. 564; Bp. Consp. ii. p. 22.

Hab. Waigiou, Mysol, New Guinea (*Wall.*).

Bill yellow, tip greenish yellow; feet dull carmine; iris orange, paler within; eyelids yellow. Length 7¾ in. Sexes alike.

26. PTILONOPUS MONACHUS, Reinwt.; Pl. Col. 253; Bp. Consp. ii. p. 24.

Hab. Batchian, Kaioa Island, Ternate, Gilolo, Morty Island (*Wall.*).

Iris dark; feet red; bill greenish. Sexes different.

c. Breast-plumes bifid or decomposed.
(*Lamprotreron, Ptilopus,* Bp.)

27. PTILONOPUS SUPERBUS, Temm.; Knip, Pig. i. t. 33; Bp. Consp. ii. p. 18.

Hab. Amboyna, Ceram, Batchian, Gilolo, Waigiou, Mysol, Aru Islands, New Guinea (*Wall.*).

Bill olive-green, tip yellowish; feet pink; claws pale; iris yellow. Length 9½ in. Sexes different.

Columba cyanovirens, Less., is probably the female of this species.

28. PTILONOPUS FORMOSUS, G. R. Gray.

Similis *P. superbo* (Temm.), sed fascia pectorali purpureo-nigro latiore et antice dilute purpurea, spatio postoculari viridi minus dilatato, rostro paullo minore.

Rich green; forehead and crown purple pink; nape and sides of the neck, to the shoulders, rufous orange; a narrow space behind the eyes and the ear-coverts green; chin and throat ashy white; the forked feathers of the neck and breast purplish at the base, which becomes pure pale purple on the upper part of the breast, and shades into the deep purple-black band which crosses the middle of the breast; middle of belly and vent yellowish white; flanks green, crossed by a white band above the thighs; under tail-coverts white, yellow-tinged, and with green stripes and spots; a large patch on the shoulders and a spot on each of the scapulars, tertiaries, and adjacent wing-coverts deep purple; tail blackish, the feathers edged with green and purple, and a whitish band at the tip; primaries black, white-edged; secondaries and greater coverts green-margined and yellow-edged. Iris yellow; bill olive-horny; feet pinky-red.

Female. Rather deeper coloured than the same sex in *P. superbus.* Total length 10½ in.; wing 5 in.

Hab. Macassar and Menado (Celebes) (*Wall.*).

Remarks.—Mr. George Robert Gray indicated this bird as distinct from *P. superbus,* in his list of Moluccan Birds (Proc.

Zool. Soc. 1860, p. 360), and proposed for it the name of *P. formosus.*

29. Ptilonopus porphyreus, Reinwt. Pl. Col. 106; Bp. Consp. ii. p. 18. (*P. roseicollis,* Wagl.)

Hab. Java (*Wall.*), "6000 to 8000 feet elevation."

Bill yellowish olive; feet coral-red; iris crimson. Length 12 in.

30. Ptilonopus flavicollis, G. R. Gray; Bp. Consp. ii. p. 20; Icon. Pig. pl. 20.

Hab. Timor (*Wall.*).

Bill olive-green; orbits bare, greenish olive; iris reddish orange; feet pale olive; claws dusky.

31. Ptilonopus diadematus, Temm. Pl. Col. 254; Bp. Consp. ii. p. 17.

Hab. Banda (*Wall.*).

Bill and feet as in the last species.

B. First primary but slightly and gradually narrowed at the end. (*Sylphitreron,* Verreaux.)

32. Ptilonopus perlatus, Temm. Pl. Col. 559; Bp. Consp. ii. p. 40.

Hab. Aru Islands (*Wall.*), New Guinea (*Temm.*).

Bill yellow; feet red; iris orange-yellow.

This fine species has been put by Bonaparte with *Carpophaga*; it seems, however to me, to go well in this group, with which it agrees in most of its characters.

33. Ptilonopus wallacii, G. R. Gray, Proc. Zool. Soc. 1858, p. 185, pl. 136.

Hab. Aru Islands (*Wall.*).

Bill yellow; feet red; iris orange-red. Length 10½ in.

34. Ptilonopus aurantiifrons, G. R. Gray, Proc. Zool. Soc. 1858, p. 185, pl. 137.

Hab. Aru Islands, Mysol, Salwatty, New Guinea (*Wall.*).

Bill yellow, base swollen, red; feet red; iris orange. Length 9½ in. Sexes different.

(*Iotreron*, Bp.)

35. PTILONOPUS HYOGASTER, Reinwt.; Pl. Col. 252; Bp. Consp. ii. p. 25.

Hab. Batchian, Gilolo (*Wall.*).

Bill bluish white, tip yellow; feet lilac-purple.

36. PTILONOPUS MELANOCEPHALUS, Gm.; Knip, Pig. i. t. 30; Bp. Consp. ii. p. 24.

Hab. Java, Lombock, Celebes, Sulla Island (*Wall.*).

Bill yellow, greenish horny at the tip; feet pink red; orbits bare, green. Length 9 in. Sexes different.

37. PTILINOPUS PRASINORRHOUS, G. R. Gray, Proc. Zool. Soc. 1858, p. 185.

Hab. Bouru, Goram, Matabello, Ké Island, Mysol, Waigiou (*Wall.*).

Bill and skin to the eye gamboge-yellow; feet dull purple; iris orange-brown. Sexes different.

38. PTILONOPUS RIVOLI, Prevost; Knip, Pig. ii. t. 57; Bp. Consp. p. 25.

Hab. Louisiade Archipelago.

39. PTILONOPUS VIRIDIS, L.; Knip, Pig. ii. t. 17; Bp. Consp. ii. p. 24.

Hab. Bouru, Amboyna, Ceram, Goram (*Wall.*).

Feet pink red; bill yellow, base red; orbits yellow; iris with inner ring yellow, outer red. Sexes alike.

40. PTILONOPUS EUGENIÆ, Gould, Proc. Zool. Soc. 1856, p. 137.

Hab. Solomon Islands.

41. PTILONOPUS ROSEIPECTUS, G. R. Gray, Proc. Zool. Soc. 1861, p. 432.

Hab. Waigiou, Gagy Island, Mysol (*Wall.*).

Feet red; bill orange; iris yellow. Sexes different.

42. PTILONOPUS NANUS, Temm. Pl. Col. 565; Bp. Consp. ii. p. 25.

Hab. New Guinea.

(*Omeotreron*, Bp.)

43. Ptilonopus batilda, Bp. Consp. Gen. Av. ii. p. 27.
Hab. Philippine Islands.

44. Ptilonopus virens, Less. Voy. Coq. t. 42. f. 2; Bp. Consp. ii. p. 27.
Hab. New Guinea.

(*Phapitreron*, Bp.)

45. Ptilonopus leucotis, Temm. Pl. Col. 189; Bp. Consp. ii. p. 28.
Hab. Philippine Islands.

46. Ptilonopus amethystina, Bp. Consp. Gen. Av. ii. p. 28.
Hab. Philippine Islands.

Carpophaga, Selby.

(*Globicera*, Bp.)

47. Carpophaga tumida, Wall. (*C. sundevalli*, Bp., B. M. Cat. Columbæ, p. 18). *C. pacifica*, Gm.; Bp. Icon. Pig. pl. 35.; Consp. ii. p. 30.

Æneo-viridis, aureo micans, alis caudaque purpureis; capite, collo, dorso superiore pectoreque pallide cinereis; nucha et corpore subtus vinaceo-canis; mento et fronte albis; tectricibus caudæ inferioribus castaneis, alis subtus cum tectricibus inferioribus fuscis; rostro parvo nigro-plumbeo, cera magna elevata tumida, pedibus et iridibus rubris.

Brilliant metallic green, with golden and blue reflexions; wings and tail metallic purple; head, neck, breast, and upper part of back very pale ash-colour, except the back of the head and nape, which are tinged with red; breast and belly pale red or purplish buff; under tail-coverts rich chestnut-brown; under wing-coverts blackish ash; forehead and chin white; quills and tail beneath blackish. Bill and cere blackish lead-colour, the cere elevated and enormously swollen in a hump, like that of *Anser cygnoides*, in both sexes; eyelids pale; feet coral-red; iris crimson.

Total length 17 in.; wing 9¾ in.; tail 6¼ in.; bill, from feathers at gape, 1 in.

Hab. Waigiou, Mysol, New Guinea (*Wall.*).

Remarks.—This species has a hoarse croaking note, like that of *C. chalybura*. It was abundant in Waigiou, and both sexes had the cere nearly equally swollen during the three months that I stayed there. It does not agree with Bonaparte's description of *C. sundevalli*, with which it has been hitherto confounded; and whether it is the bird named *C. pacifica* by Gmelin it is impossible now to determine. I have therefore thought it better to give it a new name, although it is undoubtedly the same as that figured by Bonaparte in his 'Iconographie' under the name of *C. pacifica*.

48. CARPOPHAGA SUNDEVALLI, Bp. Consp. ii. p. 32; Icon. Pig. pl. 40.

Hab. Caroline Island (*Paris Mus.*); Louisiade Archipelago (*B. M.*).

49. CARPOPHAGA RUBRICERA, Gr.; Bp. Consp. ii. p. 31.

Hab. New Ireland (*Paris Mus.*).

(*Carpophaga*, Selby.)

50. CARPOPHAGA ÆNEA (L.); Knip, Pig. i. t. 3; Bp. Consp. ii. t. 32.

Hab. Java, Sumatra, Borneo, Lombock, Flores (*Wall.*), Malay Peninsula.

The Borneo specimens are rather darker and more richly coloured. Bill lead-colour; iris, eyelids, feet, and base of bill purple red. Total length 17 in. This species feeds on various fruits, sometimes eating small figs, the size of currants, at others swallowing hard globular palm-fruits an inch in diameter. Allied to this are

C. sylvatica, Tickell. India generally.

C. insularis, Blyth. Nicobar Islands.

51. CARPOPHAGA CHALYBURA, Bp. Consp. ii. p. 32; Icon. Pig. pl. 43.

Hab. Philippine Islands.

52. CARPOPHAGA CONCINNA, n. s. (*C. chalybura*, G. R. Gray, Proc. Zool. Soc. 1858, p. 186.)

Cinereo-alba, capite cinerascente (fronte albo marginata), nucha cinereo-vinacea, dorso tectricibusque alarum viride purpureo et aureo micantibus, remigibus rectricibusque obscurioribus purpureis, tectricibus alarum inferioribus æneis et plumbeis, remigibus rectricibusque subtus nigrescentibus, tectricibus caudæ inferioribus castaneis.

Pale ashy white; head pale ashy; forehead narrowly white, rufous-tinged; back, with upper wing- and tail-coverts, rich metallic green with gold and purple reflections; quills and tail-feathers dark purple; under tail-coverts chestnut, vent ashy; belly and thighs faintly tinged with yellowish or rufescent (in Aru specimens more ashy); quills and tail-feathers beneath all blackish; under wing-coverts brassy-green and lead-colour. Bill horny black; feet coral-red; iris light orange-yellow; eyelids pale, their edges white. Total length 20 in.; wing $10\frac{3}{4}$ in.; tail 7 in.

Hab. Matabello Island, Sanguir Island, Aru (one small island west of) (*Wall.*); Banda Island, Ké Island (seen, but no specimens obtained); Philippine Islands? (*B. M.*).

This species has a remarkably loud, hoarse, booming note, like the roar of a wild beast. It is one of the largest and handsomest of the genus. It is very closely allied to *C. chalybura*, Bp., but, if his description and figure are to be relied upon, is quite distinct. The British Museum specimen is of this species, and probably came from the island of Mindanao.

53. Carpophaga perspicillata (Temm.), Pl. Col. 246; Bp. Consp. ii. p. 33.

Hab. Ceram, Amboyna.

Bill lead-colour, red at base above; iris dark; feet purple.

54. Carpophaga temmincki, n. s. (*C. perspicillata*, Bp. Icon. Pig. pl. 45.)

Similis *C. perspicillatæ*, sed dorso alisque magis cæruleis, capite colloque ardesiacis, pectore ardesiaco-cinereo, remigibus vix pulverulentis.

Like *C. perspicillata*, Temm., but the back and wings more purplish green; the head and neck dark purplish ashy, shading into pure ashy on the breast, the metallic-green colouring extending up to the nape; the white circle round the eye, and the patch on the forehead, more distinct.

Bill bluish horn, red at base above; feet dull purple; iris deep olive-brown. Total length 18 in.

Hab. Bouru, Batchian, Gilolo, Waigiou (*Wall.*).

In my list of the birds of Bouru, I have regarded this as a variety of *C. perspicillata*; but as its differences are exactly analogous to those of many of the *Psittaci* that have been universally treated as species, I thought it better to give this also a distinctive name.

(*Ptilocolpa*, Bp.)

55. CARPOPHAGA CAROLA, Bp. Consp. ii. p. 34.

Hab. Philippine Islands.

56. CARPOPHAGA GRISEIPECTUS, Gray; Bp. Consp. ii. p. 34.

Hab. Philippine Islands.

(*Ducula*, Hodgs.)

57. CARPOPHAGA BADIA, Raffles; Temm. Pl. Col. 165; Bp. Consp. ii. p. 35.

Hab. Java, Sumatra.

58. CARPOPHAGA LACERNULATA, Temm. Pl. Col. 194; Bp. Consp. ii. p. 35.

Hab. Java (*Wall.*).

Bill horny black; iris deep crimson; feet pink-red. Length 16 in.

59. CARPOPHAGA BASILICA, Bp. Consp. ii. p. 35.

Hab. Batchian, Gilolo, Morty Island (*Wall.*).

Bill dusky lead-colour; iris dark red; feet coral-red; eyelids red. Length, ♂ 16½ in., ♀ 15½ in.

60. CARPOPHAGA PAULINA, Temm.; Knip, Pig. i. t. 4; Bp. Consp. ii. p. 35.

Hab. Macassar, Menado (Celebes); Sulla Island (*Wall.*).

Bill lead-blue, above nostrils to base red; iris deep red; eyelids red.

61. CARPOPHAGA CINERACEA, Temm. Pl. Col. 563; Bp. Consp. ii. p. 36.

Hab. Timor (*Wall.*).

Iris dark; bill black; feet purplish black.

Allied to *C. lacernulata* of Java.

62. Carpophaga rosacea, Temm. Pl. Col. 578; Bp. Consp. ii. p. 36.

Hab. Flores, Timor, Macassar (*Wall.*).

Bill lead-colour, red at base above; iris and eyelids red; orbits bare, pale lead-colour; feet pink red. Length 16½ in.

63. Carpophaga pistrinaria, Bp. Consp. ii. p. 36.

Hab. Solomon Islands.

There is one Indian species of this group: *Ducula insignis*, Hodgs., which inhabits Northern India.

(*Myristicivora*, Reich.)

64. Carpophaga grisea, Bp. Consp. ii. p. 36.

Hab. Malasia, Borneo.

65. Carpophaga luctuosa, Reinwt.; Pl. Col. 247.

Hab. Menado, Macassar (Celebes); Sulla Island (*Wall.*).

Bill and feet lead-blue, bill horny yellow at the tip; iris black.

This species is distinguished from the following by the rich cream-colour of its plumage, the powdery-white outer webs of all the quills, and the outer tail-feathers nearly all white.

66. Carpophaga melanura, G. R. Gray, Proc. Zool. Soc. 1860, p. 361.

Hab. Bouru, Ceram, Amboyna, Batchian, Gilolo, Goram (*Wall.*).

Bill greenish horn-colour, tip greenish yellow; feet lead-colour; iris nearly black.

67. Carpophaga spilorrhoa, G. R. Gray, Proc. Zool. Soc. 1858, p. 186.

Hab. Aru Islands (*Wall.*).

Bill yellowish; iris very dark olive; feet lead-blue.

68. Carpophaga bicolor, Scop; Bp. Consp. ii. p. 36.

Hab. Mysol, New Guinea (*Wall.*).

Bill black; feet lead-colour.

This species has the thighs and under tail-coverts entirely white; the bill is also entirely black, and shorter than in the allied species.

(*Zonœnas*, Reich.)

69. Carpophaga muelleri, Temm. Pl. Col. 566; Bp. Consp. ii. p. 37.

Hab. Aru Islands (*Wall.*), (New Guinea, *Temm.*).

Feet purplish red; bill black; orbits pale; iris olive-brown.

70. Carpophaga pinon, Quoy & Gaim. Voy. Uranie, t. 28; Bp. Consp. ii. p. 37.

Hab. Aru Islands, New Guinea, Waigiou, Mysol (*Wall.*).

Bill dark lead-colour, tip bluish horny; feet carmine-red; iris and orbits coral-red. Length 18 in.

71. Carpophaga radiata, Quoy & Gaim. Voy. Ast. t. 26; Bp. Consp. ii. p. 38.

Hab. Macassar, Menado (Celebes) (*Wall.*).

Bill olive-green, black at tip; orbits greenish; iris orange; feet coral-red.

72. Carpophaga zoea, Less. Voy. Coq. t. 39; Bp. Consp. ii. p. 38.

Hab. Aru Islands, New Guinea (*Wall*).

Bill black; orbits pale reddish; iris white; feet purple-red.

73. Carpophaga rufigaster, Quoy & Gaim. Voy. Ast. t. 27; Bp. Consp. ii. p. 38.

Hab. New Guinea, Mysol, Waigiou (*Wall.*).

Bill black; iris, eyelids, orbits, and feet red. Length 13½ in.

(*Hemiphaga*, Bp.)

74. Carpophaga poliocephala, Gray, Gen. of Birds, t. 119; Bp. Consp. ii. p. 39.

Hab. Philippines.

75. Carpophaga forsteni, Temm.; Knip, Pig. ii. p. 29; Bp. Consp. ii. p. 39.

Hab. Celebes (Menado) (*Wall.*).

Bill black; orbits and feet deep red; iris orange-yellow. Length 19 inches.

This fine species appears to be confined to the mountainous district of Minahassa, in the northern peninsula of Celebes.

(*Megaloprepia*, Reich.)

76. Carpophaga puella, Less.; Knip, Pig. ii. t. 1; Bp. Consp. ii. p. 40.

Hab. New Guinea, Waigiou, Mysol (*Wall.*).

Bill yellow, red at base; iris orange-red; feet yellow green; claws dusky. Length 12 inches. Sexes alike.

77. Carpophaga bernsteini, Schleg. *Ptilopus bernsteini*, Schleg. Nederl. Tijdsch. 1863, p. 59. *Carpophaga formosa*, G. R. Gray, Proc. Zool. Soc. 1860, p. 360. *P. ochrogaster*, Bernst. Ned. Tijdsch. 1865, p. 324.

Hab. Gilolo (*Wall.*), Batchian (*Bernstein*).

Bill and feet lead-colour; apex of bill yellow. Sexes differ.

This species must certainly go in the same genus with *C. puella* and *C. magnifica*; and I believe they are nearer *Carpophaga* than *Ptilonopus*, though they should perhaps form a genus distinct from either. After much consideration as to the proper course to adopt, I have accepted Prof. Schlegel's name to the exclusion of that given at a much earlier date by Mr. G. R. Gray, because, immediately preceding his description of the species in question, Mr. Gray had indicated and sufficiently described a *Ptilonopus formosus*, which bird exists in many collections, and has no doubt already received the name there given. The difference of opinion as to the *genus* of the present species obliges me to change one of the bird's names; and it seems therefore most proper to retain that which had the precedence, though only by a few lines.

Family COLUMBIDÆ. Wood-Pigeons and Doves.

Ianthœnas, Reich.

78. Ianthœnas metallica, Temm. Pl. Col. 565; Bp. Consp. ii. p. 44.

Hab. Timor (*Wall.*).

Base of bill red, tip pale yellow horny; iris orange; orbits red; feet dull red; claws pale. Length 17 in.

79. Ianthœnas halmaheira, Bp. Consp. ii. p. 44.

Hab. Gilolo, Waigiou, Mysol (*Wall.*).

Bill red, tip white; iris ochre-orange; orbits red; feet dull coral-red; claws pale. Length 15½ in.

I cannot find that this bird was described by any one previous to the publication of Bonaparte's 'Conspectus'; his name must therefore be adopted in preference to the catalogue name "*albogularis.*"

80. IANTHŒNAS ALBOGULARIS, Bp. Comptes Rendus, xliii. p. 835.

Hab. Ceram (*Leyden Mus.*).

Bonaparte says this has a smaller bill than the last species. I heard of its existence in Ceram, but did not obtain a specimen.

MACROPYGIA, Sw.

81. MACROPYGIA PHASIANELLA, Temm. Linn. Trans. xiii. p. 129; Gould, Birds of Australia, v. t. 75; Bp. Consp. ii. p. 56.

Hab. Aru Islands, Ké Island (*Wall.*), Australia.

82. MACROPYGIA MAGNA, Wallace, Proc. Zool. Soc. 1863, p. 497.

Hab. Timor (*Wall.*).

Bill blackish; feet pale pink red. Length 17 in.

83. MACROPYGIA RUFIPENNIS, Blyth, J. A. S. Bengal, 1846, p. 371; Bp. Consp. ii. p. 56.

Hab. Nicobar Islands.

84. MACROPYGIA AMBOINENSIS, L.; Bp. Consp. ii. p. 56.

Hab. Bouru, Amboyna, Ceram (*Wall.*).

Var. *batchianensis* (*M. albicapilla*, G. R. Gray, P. Z. S. 1860, p. 361), breast immaculate, violet brown; feathers of nape green-margined. Like *M. ruficeps*, but larger.

Hab. Batchian (*Wall.*).

Bill dusky horn-colour; feet red; iris pearly pink.

Var. *macassariensis*, earthy brown markings, less distinct; resembles *M. magna*, but tail-markings agree with this species.

Hab. Macassar (*Wall.*).

85. MACROPYGIA ALBICAPILLA, Bp. Consp. ii. p. 57.

Hab. Macassar, Tondano (Celebes), Sulla Island (*Wall.*).

Bill and feet dusky purple; iris pinky pearl-colour. Length 14 in.; wing 6 in.; bill, from front, ½ in.

86. MACROPYGIA TENUIROSTRIS, Gray, B. M. Cat. Columb. p. 39; Pl. Col. 100 (*phasianella*).
Hab. Philippines (B. M.).

87. MACROPYGIA DOREYA, Bp. Consp. ii. p. 57.
Hab. New Guinea, Mysol, Waigiou (*Wall.*).
Bill reddish, tip dusky; feet dusky red.

88. MACROPYGIA CARTERETIA, Bp. Consp. ii. p. 57.
Hab. New Ireland.

89. MACROPYGIA EMILIANA, Bp. Consp. ii. p. 58.
Hab. Java, Lombock (*Wall.*).
Iris reddish pearly, or red with yellow inner ring; bill horny or flesh-colour; feet red or purplish. Length 14½ in.

90. MACROPYGIA RUFICEPS, Temm. Pl. Col. 561; Bp. Consp. ii. p. 58.
Hab. West Java (*Wall.*).
Iris ashy white; bill reddish horn-colour; feet coral-red.
Length 12½ in.; wing 5½ in.

91. MACROPYGIA LEPTOGRAMMICA, Temm. Pl. Col. 560; Bp. Consp. ii. p. 58. (*M. unchall*, Wagl.)
Hab. West Java (*Wall.*).
Bill black; iris very narrow, yellow; eyelids red; feet red. Length 15 in.
The female is banded throughout beneath; the male only slightly on the breast. Found up to an elevation of 7500 feet.

92. MACROPYGIA WALICMEHRA, Reich. Columbariæ, p. 86.
Hab. Java.
The only other species of the genus are
Macropygia tusalia, Hodgs., from N. India, allied to the last; and
Macropygia macrura, Gm., from Ceylon.

TURACŒNA, Bp.

93. TURACŒNA MANADENSIS, Quoy & Gaim. Voy. Astr. t. 30; Bp. Consp. ii. p. 58.
Hab. Macassar, Menado (Celebes), Sulla Island (*Wall.*).

Bill and feet black; orbits bare, red.

94. TURACŒNA MODESTA, Temm. Pl. Col. 552; Bp. Consp. ii. p. 59.

Hab. Timor (*Wall.*).

Bill and feet black; iris brick-red, inner ring yellow; orbits yellow. Length 16 in.

95. TURACŒNA CRASSIROSTRIS, Gould, Proc. Zool. Soc. 1856, p. 136.

Hab. Guadalcanar (Solomon Islands).

REINWARDTŒNA, Bp.

96. REINWARDTŒNA REINWARDTI, Temm. Pl. Col. 248; Bp. Consp. ii. p. 59.

Hab. Batchian, Gilolo, Amboyna, Ceram, Waigiou, New Guinea (*Wall.*).

Base of bill and orbits dull blood-red; tip of bill horny; feet coral-red; iris blood-red, with an inner ring yellow. Length 21 in.

TURTUR, Selby.

97. TURTUR TIGRINA, Temm. Pig. t. 43. (Bp. Consp. ii. p. 65, *T. chinensis.*)

Hab. Malay Peninsula, Java, Lombock, Celebes, Flores, Timor, Ternate (*Wall.*).

Iris reddish pearl; bill black; feet pinkish.

This species is sufficiently distinct from *T. chinensis* and *T. suratensis*, with which it has been confounded. From the former it differs in its much lighter underparts, the dark spots on the back and wing-coverts, and the white shoulder and margin of greater wing-coverts; and from the latter by the entire absence of the violet rufescent spots on the back and wings.

(*Streptopelia*, Bp.)

98. TURTUR BITORQUATA, Temm.; Knip, Pig. i. t. 40; Bp. Consp. ii. p. 65.

Hab. Java, Lombock, Flores, Timor (*Wall.*).

Bill black, base at gape red; orbits red; iris yellow; feet pinky red. Length 13 in.

99. Turtur dussumieri, Temm. Pl. Col. 188; Bp. Consp. ii. p. 65.

Hab. Philippine Islands (*B. M.*), Java, Sumatra, Borneo (*Bp.*), ? err. loc.

100. Turtur humilis, Temm. Pl. Col. 259; Bp. Consp. ii. p. 66.

Hab. Philippine Islands, var. (*Bp.*), Malacca (*Wall.*).

101. Turtur cinerea, Scop.; Bp. Consp. ii. p. 61.

Hab. Philippine Islands.

Family GOURIDÆ. Ground-Pigeons.

Trugon, Homb. & Jacq.

102. Trugon terrestris, Homb. & Jacq. Voy. au Pôle Sud, Ois. t. 28. f. 1; Bp. Consp. p. 86.

Hab. New Guinea (N.W. extremity) (*Wall.*).

Iris dark red; bill yellow, base dark; feet yellow ?

Henicophaps, G. R. Gray.

103. Henicophaps albifrons, G. R. Gray, Proc. Zool. Soc. 1861, p. 432, pl. 44.

Hab. New Guinea, Waigiou (*Wall.*).

Iris dark; bill horn-colour; feet pale dull red. Length 14 in.

This curious species was first shot by myself in Waigiou; it was afterwards obtained by my collector in New Guinea. It feeds on low trees and shrubs, but does not appear to be altogether terestrial.

Phlegœnas, Reich.

104. Phlegœnas luzonica, Scop. (*cruenta*, Gm.); Knip, Pig. i. t. 8; Bp. Consp. ii. p. 88.

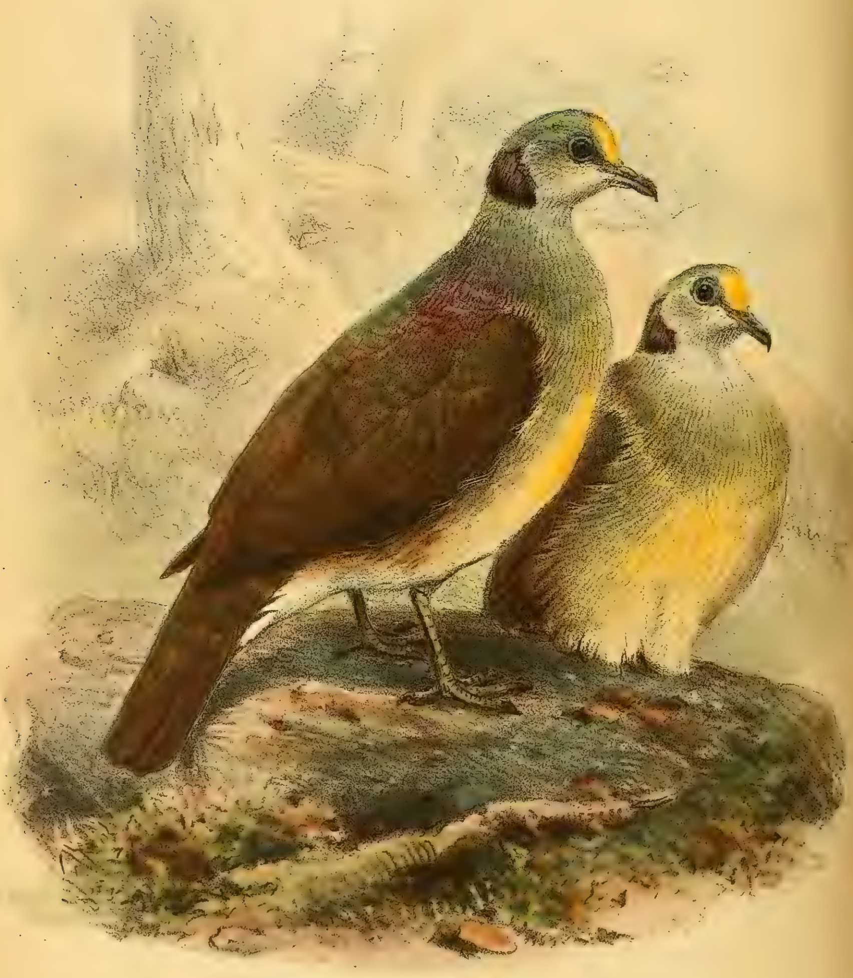
Hab. Philippine Islands.

105. Phlegœnas criniger, Homb. & Jacq. Voy. au Pôle Sud, t. 27. f. 2, ♀; Bp. Consp. ii. t. 88.

P. bartletti, Sclat. Proc. Zool. Soc. 1863, p. 377, pl. 34.

Hab. Sooloo Islands.

Remark.—Dr. Sclater informs us he is now satisfied of the identity of these birds, P. Z. S. 1865, p. 238.



$\frac{1}{3}$

J. Wolf del. et lith.

M & N Hanhart imp.

PHLEGŒNAS TRISTIGMATA.

106. Phlegœnas tristigmata, Bp. Consp. ii. p. 88.
(Plate X.)

Hab. Macassar, Menado (Celebes) (*Wall.*).

Bill dusky purplish, apex dark horny; orbits pale slaty; eyelids dull purple; legs carmine-red; toes slaty purple; claws pale horny.

This species feeds on the ground, and inhabits the drier forests of Celebes, where it is very scarce.

107. Phlegœnas rufigula, Puch. Voy. au Pôle Sud, t. 27. f. 1; Bp. Consp. ii. p. 88.

Hab. New Guinea (*Homb. & Jacq.*).

Chalcophaps, Gould.

108. Chalcophaps javanica, Gm.; Bp. Consp. ii. t. 91.

Hab. Borneo, Java, Lombock, Flores (*Wall.*), Sumatra (*Mus. Leyden*).

Iris dark brown; bill coral-red, purple at base; feet purple. Length 10½ in.

109. Chalcophaps moluccensis, G. R. Gray, Proc. Zool. Soc. 1860, p. 361, ♀; Wallace, Proc. Zool. Soc. 1862, p. 345.

Hab. Bouru, Batchian, Ternate, Gilolo, Ceram, Amboyna, Sulla Island (*Wall.*).

Iris dark olive; bill red; feet pink. Length 10 in.

This species has a very close affinity to *C. javanica*; but the female differs in having the head and upper part of back earthy brown, the vinous purple and slaty tints being entirely absent.

110. Chalcophaps borneensis, Bp. Comptes Rendus, xliii. p. 948.

Hab. Borneo.

111. Chalcophaps timoriensis, Bp. Comptes Rendus, xliii. p. 948.

Hab. Timor (*Wall.*).

Bill orange, base red; feet dull red; iris dark brown; eyelids red. Length 10½ in.

112. CHALCOPHAPS STEPHANI, Homb. & Jacq. Voy. au Pôle Sud, t. 38. f. 2.

Hab. North Celebes (*Wall.*).

Iris narrow, dark olive-brown; eyelids dull red; bill bright yellow; feet blood-red. Length 11 in.; wing $5\frac{3}{4}$ in.

113. CHALCOPHAPS HOMBRONI, n. sp. (*C. stephani*, pt., Bp. Consp.)

Similis *C. stephani*, sed minor; fronte cæruleo-grisea, collo et dorso rufis nec violaceis.

Smaller than *C. stephani*; rufous, above dusky rufous; forehead slate-colour; the middle and larger wing-coverts and ends of the tertiaries golden green; back black, with two yellowish bands; bill red; feet purple-red; iris dark olive. Length $9\frac{1}{2}$ in.; wing $5\frac{1}{4}$ in.

Hab. New Guinea, Waigiou, Mysol (*Wall.*).

GEOPELIA, Sw.

114. GEOPELIA MAUGEII, Temm.; Knip, Pig. i. t. 52; Bp. Consp. ii. p. 94.

Hab. Timor, Flores (*Wall.*).

Iris pinky white, orbits buff; bill lead-colour; feet dull purple. Length 10 in.

115. GEOPELIA STRIATA, L.; Knip, Pig. i. t. 47: Bp. Consp. ii. t. 94.

Hab. Lombock (*Wall.*), Java (*B. M.*), China (*B. M.*).

CALŒNAS, Gray.

116. CALŒNAS NICOBARICA, L.; Knip, Pig. i. t. 2; Bp. Consp. ii. p. 95.

Hab. Batchian, New Guinea (*Wall.*); widely distributed over the archipelago.

Iris dark brown; feet reddish purple; bill and cere lead-black. This remarkable species feeds on the ground, and has a heavy but powerful flight. I have positive information of its having been taken at sea, making for a small island one hundred miles north of New Guinea. This fact will help to explain its curious distribution over the whole archipelago; but it is everywhere scarce, and generally confined to the small outlying islets, where it is probably free from the attacks of carnivorous mammals. On New Guinea, where there are none such, it is found on the mainland.

GOURA, Flem.

117. GOURA CORONATA, L.; Knip, Pig. i. t. 1; Bp. Consp. ii. p. 96.

Hab. Waigiou, Mysol, New Guinea (*Wall.*).

Iris orange-crimson; legs whitish, powdery; feet red; bill dusky horn-colour. A ground feeder; gizzard very muscular, containing large pebbles. Dampier, in the year 1699, was probably the first Englishman who saw this bird. His description is full and accurate:—"One of my men killed a stately land-fowl, as big as the largest dunghill-cock. It was of a sky-colour; only in the middle of the wings was a white spot, about which were some reddish spots. On the crown it had a large bunch of long feathers, which appeared very pretty. His bill was like a pidgeon's. His crop was full of small berries. It lays an egg as big as a large hen's egg; for our men climbed the tree where it nested, and brought off one egg."

118. GOURA VICTORIÆ, Fraser, Proc. Zool. Soc. 1844, p. 27; Gray & Mitchell, Gen. of Birds, ii. t. 120; Bp. Consp. ii. p. 96.

Hab. Jobie Island (North of New Guinea).

Remark.—I obtained information of the true habitat of this species from the traders, who frequently bring it alive to the Moluccas.

The island of Jobie would probably furnish many novelties to an explorer, since, besides this fine and very distinct species, the only other birds which have as yet been received from it are two Parrots, *Lorius cyanauchen* and *Eos cyanogenia*, which are equally distinct from the allied species inhabiting the mainland of New Guinea. It is to be regretted that the natives of Jobie have a disagreeable habit of putting to death such strangers as visit them; for naturalists may perhaps be thereby deterred from undertaking the exploration of the island.

TABLE *showing the distribution of Malayan Pigeons.*

	Indian Region.							Australian Region.																	
	Asia.		Indo-Malay Islands.					Celebes.		Timor group.			Moluccan group.								Papuan Islands.				
TRERONIDÆ.	Indian Asia.	Chinese Asia.	Malacca and Singapore.	Sumatra.	Java.	Borneo.	Philippines.	Celebes.	Sulla Island.	Lombock.	Flores.	Timor.	Batchian.	Kaioa Island.	Gilolo and Ternate.	Morty Island.	Bouru.	Ceram and Amboyna.	Goram and Matabello.	Ké Island.	Aru Islands.	Mysol.	Waigiou.	New Guinea and Salwatty	Islands east of New Guinea.
TRERON (*Sphenocercus*)																									
oxyura			I		I	I																			
apicauda	I																								
korthalsi			I	I	I																				
sphenura	I																								
phasianellus	I																								
formosæ		I																							
sieboldi		I																							
(*Osmotreron*)																									
viridis			I	I		I	I	I																	
axillaris							I																		
aromatica																	I	I							
fulvicollis			I	I		I	I																		
olax			I	I	I																				
bicincta	I																								
malabarica	I																								
phayrei		I																							
flavogularis	I																								
chloroptera(Nicobar)		I																							
pompadora	I																								
(*Crocopus*)																									
phœnicoptera	I	I																							
viridifrons		I																							
chlorogaster	I																								
(*Treron*)																									
psittacea												I													
floris											I														
griseicauda								I	I																
pulverulenta					I																				
(*Toria*)																									
nepalensis	I		I	I																					
nasica				I																					
(*Butreron*)																									
capellii			I	I	I																				
PTILONOPUS (*Leucotreron*)																									
cinctus												I													
albocinctus											I														
gularis								I																	
lechlancheri																								I	
(*Rhamphiculus*)																									
occipitalis							I																		

TABLE (*continued*).

	Indian Region.							Australian Region.																	
	Asia.		Indo-Malay Islands.					Celebes.		Timor group.			Moluccan group.								Papuan Islands.				
TRERONIDÆ.	Indian Asia.	Chinese Asia.	Malacca and Singapore.	Sumatra.	Java.	Borneo.	Philippines.	Celebes.	Sulla Island.	Lombock.	Flores.	Timor.	Batchian.	Kaioa Island.	Gilolo and Ternate.	Morty Island.	Bouru.	Ceram and Amboyna.	Goram and Matabello.	Ké Island.	Aru Islands.	Mysol.	Waigiou.	New Guinea and Salwatty.	Islands east of New Guinea.
PTILONOPUS																									
(*Rhamphiculus*)																									
hugonianus							I																		
jambu			I	I		I																			
iozonus																					I				
humeralis																								I	
(*Cyanotreron*)																									
coronulatus																					I			I	
pulchellus																						I	I	I	
monachus													I	I	I	I									
(*Lamprotreron*)																									
superbus													I		I			I				I	I		
formosus								I																	
porphyreus					I																				
flavicollis												I													
diadematus (Banda)																		IB							
(*Sylphitreron*)																									
perlatus																					I			I	
wallacii																					I				
aurantiifrons																					I	I	I	I	
(*Iotreron*)																									
hyogaster													I		I										
melanocephalus					I			I	I	I															
prasinorrhous																	I		I	I		I	I		
rivoli																									I
viridis																	I	I	I						
eugeniæ																									I
roseipectus																						I	I		
nanus																								I	
(*Omeotreron*)																									
batilda							I																		
virens																								I	
(*Phapitreron*)																									
leucotis							I																		
amethystina							I																		
CARPOPHAGA																									
(*Globicera*)																									
sundevalli																								I	I
tumida																						I	I	I	
rubricera																									I
(*Carpophaga*)																									
ænea			I	I	I	I				I	I														
sylvatica	I																								

TABLE (*continued*).

	INDIAN REGION.							AUSTRALIAN REGION.																	
	Asia.		Indo-Malay Islands.					Celebes.		Timor group.			Moluccan Group.								Papuan Islands.				
	Indian Asia.	Chinese Asia.	Malacca and Singapore.	Sumatra.	Java.	Borneo.	Philippines.	Celebes.	Sulla Island.	Lombock.	Flores.	Timor.	Batchian.	Kaioa Island.	Gilolo and Ternate.	Morty Island.	Bouru.	Ceram and Amboyna.	Goram and Matabello.	Ké Island.	Aru Islands.	Mysol.	Waigiou.	New Guinea and Salwatty.	Islands east of New Guinea.
TRERONIDÆ.																									
CARPOPHAGA																									
(*Carpophaga*)																									
insularis (Nicobar)			I																						
chalybura							I																		
concinna																			I	I					
perspicillata																		I							
temmincki													I		I		I						I		
(*Ptilocolpa*)																									
carola							I																		
griseipectus							I																		
(*Ducula*)																									
badia				I	I																				
lacernulata					I																				
basilica													I		I	I									
paulina								I	I																
cineracea												I													
rosacea								I			I	I													
pistrinaria																									I
insignis	I																								
(*Myristicivora*)																									
grisea			I			I																			
luctuosa								I	I																
melanura													I		I		I	I	I						
spilorrhoa																					I				
bicolor																						I		I	
(*Zonœnas*)																									
muelleri																					I			I	
pinon																					I	I	I	I	
radiata								I																	
zoeæ																					I			I	
rufigaster																						I	I	I	
(*Hemiphaga*)																									
poliocephala							I																		
forsteni								I																	
(*Megaloprepia*)																									
puella																						I	I	I	
bernsteini													I		I										
COLUMBIDÆ.																									
IANTHŒNAS																									
metallica												I													
halmaheira															I							I	I		

TABLE (*continued*).

	INDIAN REGION.							AUSTRALIAN REGION.																	
	Asia.		Indo-Malay Islands.					Celebes.		Timor group.			Moluccan Group.								Papuan Islands.				
COLUMBIDÆ.	Indian Asia.	Chinese Asia.	Malacca and Singapore.	Sumatra.	Java.	Borneo.	Philippines.	Celebes.	Sulla Island.	Lombock.	Flores.	Timor.	Batchian.	Kaioa Island.	Gilolo and Ternate.	Morty Island.	Bouru.	Ceram and Amboyna.	Goram and Matabello.	Ké Island.	Aru Islands.	Mysol.	Waigiou.	New Guinea and Salwatty.	Islands east of New Guinea.
IANTHŒNAS																									
albogularis																		I							
TURACŒNA																									
manadensis								I	I																
modesta												I													
crassirostris																									I
REINWARDTŒNA																									
reinwardti													I		I			I					I	I	
MACROPYGIA																									
phasianella																				I	I				
magna												I													
rufipennis (Nicobar)			I																						
amboinensis													I				I	I							
albicapilla								I	I																
tenuirostris							I																		
doreya																						I	I	I	
carteretia																									I
emiliana					I					I															
ruficeps					I																				
leptogrammica					I																				
walicmehra					I																				
tusalia	I																								
macrura	I																								
TURTUR																									
tigrina			I		I			I		I		I			I										
suratensis	I																								
chinensis		I																							
meena	I																								
cinerea		I					I																		
risoria		I																							
bitorquata				I	I					I		I													
dussumieri							I																		
humilis	I		I				I																		
GOURIDÆ.																									
TRUGON																									
terrestris																								I	
HENICOPHAPS																									
albifrons																							I	I	
PHLEGŒNAS																									
luzonica							I																		

TABLE (*continued*).

	INDIAN REGION.							AUSTRALIAN REGION.																	
	Asia.		Indo-Malay Islands.					Celebes.		Timor group.			Moluccan Group.								Papuan Islands.				
GOURIDÆ.	Indian Asia.	Chinese Asia.	Malacca and Singapore.	Sumatra.	Java.	Borneo.	Philippines.	Celebes.	Sulla Island.	Lombock.	Flores.	Timor.	Batchian.	Kaioa Island.	Gilolo and Ternate.	Morty Island.	Bouru.	Ceram and Amboyna.	Goram and Matabello.	Ké Island.	Aru Islands.	Mysol.	Waigiou.	New Guinea and Salwatty.	Islands east of New Guinea.
PHLEGŒNAS																									
criniger	...	...	...	...	...	...	I																		
tristigmata	...	...	...	...	...	...	...	I																	
rufigula	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	I	
CHALCOPHAPS																									
indica	I	I																							
javanica	...	...	I	I	I	I	I	...	...	I	I														
moluccensis	...	...	...	...	...	...	...	...	I	...	...	...	I	...	I	...	I	I							
borneensis ?	...	...	...	...	...	I																			
timoriensis	...	...	...	...	...	...	...	...	...	...	...	I													
stephani	...	...	...	...	...	...	...	I																	
hombroni	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	I	I	I	
GEOPELIA																									
maugeii	...	...	...	...	...	...	...	...	...	...	I	I													
striata	...	I	...	...	I	...	...	...	...	I															
CALŒNAS																									
nicobarica	...	...	I	...	...	...	...	I	...	...	...	...	I	...	...	...	...	...	...	...	...	...	...	I	
GOURA																									
coronata	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	I	
victoriæ (Jobie I.)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	I	

XXXIII.—*Notes on various Indian Birds.* By R. C. BEAVAN, Capt. Bengal Survey, M.A.S., C.M.Z.S., &c.

IN 'The Ibis' for 1862 (page 284), in an article on the ornithology of the International Exhibition, I see the remark made that "India sends only bundles and fans of Peacocks' feathers, and so does not do much to elucidate her still imperfectly known Ornis." Now, although this remark will not bear the same force now that Dr. Jerdon's 'Birds of India' has made its appearance as it did then, yet, since the publication of that famous work has rendered the study of Indian forms a task comparatively

	Indian Region.							Australian Region.																	
	Asia.		Indo-Malay Islands.					Celebes.		Timor group.			Moluccan group.								Papuan Islands.				
	Indian Asia.	Chinese Asia.	Malacca and Singapore.	Sumatra.	Java.	Borneo.	Philippines.	Celebes.	Sulla Island.	Lombock.	Flores.	Timor.	Batchian.	Kaioa Island.	Gilolo and Ternate.	Morty Island.	Bouru.	Ceram and Amboyna.	Goram and Matabello.	Ké Island.	Aru Islands.	Mysol.	Waigiou.	New Guinea and Salwatty.	Islands east of New Guinea.
TRERONIDÆ.																									
Treron	10	5	7	7	5	3	3	2	1	...	1	1	...	...	...	...	1	1	...	...	...	...	...	...	...
	14		10				3	2		2			1								0				
Ptilonopus	...	...	1	1	2	1	5	3	1	1	2	2	3	1	3	1	2	2	2	1	5	5	5	8	2
			3				5	3		4			9								13				2
Carpophaga	2	...	2	2	3	2	4	5	2	1	2	2	4	...	4	1	2	2	2	1	4	5	5	8	3
	2		5				4	5		3			6								10				3
COLUMBIDÆ.																									
Ianthœnas	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	1	...	...	...	1	1	...	...
										1			2								1				
Turacœna	...	...	...	...	...	...	...	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
								1		1															1
Reinwardtœna	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	1	...	...	...	...	1	1	
Macropygia	2	...	...	...	3	...	1	1	1	1	...	1	1	...	...	...	1	1	...	1	1	1	1	1	1
	2		3				1	1		2			2								2				1
Turtur	3	3	2	1	2	...	3	1	...	2	2	2	...	...	1	...	...	...	...	...	...	...	...	...	...
	6		3				3	1		2			1								0				
GOURIDÆ.																									
Trugon	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Henicophaps	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...
Phlegœnas	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Chalcophaps	1	1	1	1	1	2	1	1	1	1	1	1	1	...	1	...	1	1	...	...	...	1	1	1	...
	1		2				1	2		1			1								1				
Geopelia	...	1	...	...	1	...	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
	1		1							2															
Calœnas	...	...	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Goura	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	...
																					2				
Number of species	...	...	14	12	17	8	19	17	7	7	9	12	11	1	11	2	7	9	4	3	10	14	16	25	7
Number of species	....		28				19	17		18			24								34				7
Number of genera	....		8				7	9		9			9								11				4
			Indo-Malayan Subregion. 9 Genera. 43 Species.					Austro-Malayan Subregion. 15 Genera. 85 Species.																	

118 species are found in the Archipelago. Of the 15 genera, 9 are peculiar to the Archipelago.

easy to what it was before a manual of reference existed, as one who has benefited much thereby, I venture, although with some diffidence, to take up an amateur's pen with the view of contributing my small quota, and that, I am afraid, not a very valuable one, to the knowledge of our Indian birds; and the notes here hastily set down may at least, if of no other value, do something towards the elucidation of their local distribution.

My first attempt at collecting was made at Darjeeling, in the months of March, April, and May 1862, during which period I undertook an expedition to the top of Tonglu—a mountain some 10,000 feet high, which was visited by Dr. Hooker, and along the summit of which runs a portion of the boundary between Sikkim and Nepâl. The few days spent there were not at all satisfactory for bird-collecting; the weather was decidedly "damp"; in fact I was enveloped in a thick fog during all but a few hours of my stay; and the cold, to one lately arrived from the plains, combined with wet and existence in a little bit of a blanket-tent just large enough to cover a bed, made the *tout ensemble* anything but agreeable. I hope, however, to have another opportunity at some future time not only of revisiting Mount Tonglu under more auspicious circumstances, but also the interior of Sikkim and Bhootan, in both of which countries, I have no doubt, several new forms of birds are still to be found near the regions of eternal snow.

The examination of my Darjeeling collection of 1862 was kindly undertaken by Mr. Blyth, who named and labelled the specimens; but no list was drawn up until my arrival in England, when I carefully took down the names appended by him. Some of the specimens were, however, with my permission, reserved by him for further examination, and some duplicates of Calcutta and Burmese birds added; so that if, in drawing up the following notes, I should inadvertently have included any species decidedly not Himalayan as belonging to my collection of 1862, I shall feel still more obliged to that gentleman if he will correct any glaring error.

I have made other collections, in the Maunbhoom District, in 1864-65, chiefly during the cold-weather months, and in 1864, at Barrackpore, during the hot weather and rains. Some of the specimens have already reached England; others are on their way, and the rest I have still by me.

By way of preface to the notes, it may not be out of place to give a slight sketch of Maunbhoom, the district in which the majority of the specimens were collected, and in which I am professionally engaged with the Second Bengal Division of the Revenue Survey. It is a tract of country of some 5000 to 6000 square miles in extent, forming a portion of the province of Chota Nagpore, which, besides it, includes Singbhoom, Hazareebaugh, and the other districts of what formerly was the Agency of the South-west Frontier. Maunbhoom appears to be a name only given of late years to this district, from one of its *pergunnahs.* It is bounded on the north by Hazareebaugh, on the east by Beerbhoom and Bancoorah, on the south by Midnapore, and on the west by Singhbhoom and the large tract of wild and jungly country which extends for miles in that direction.

The general aspect of Maunbhoom is quite distinct from that of Lower Bengal. The low alluvial plains of the Ganges and Hoogly are here replaced by an elevated plateau gradually rising from Midnapore and Bancoorah, until it reaches its greatest culminations in the offshoots of the great Vindhyan range near Hazareebaugh, and the high tableland of Chota Nagpore (Dorundah) 1200 to 2000 feet above the sea. The highest peaks are those of Parisnâth (just outside the Maunbhoom District) and Dulma, which attain an elevation, the former of 4348 feet, and the latter of 3049 feet. The general elevation of the district must, I fancy, be from 500 to 800 feet above the sea-level. It is essentially a country of rocks: hills crop out in various directions, sometimes singly, sometimes in masses, composed almost entirely of the primary igneous rocks in a high state of contortion,—granite, gneiss, quartz, and other metamorphic rocks forming the principal groups.

The rivers are clear hill-streams with rocky beds, here and there flowing over a sandy bottom which frequently contains gold. Filled in a few hours by heavy rain, they become impassable, but as quickly subside; and in the hot months the water in places entirely disappears below the sand. Minerals, as may be expected, are abundant: iron is found everywhere;

coal crops out at Raneegunje, a well-known spot, whose collieries supply most of what is consumed of this precious fuel on this side of India. Gold is found in the beds of the rivers, washed clear of its matrix, quartz; and copper, as well as bismuth, also exists. I am of opinion that this district will eventually, when its mineral resources become better known, prove to be, on account of its proximity to Calcutta, and the facilities afforded for transport by the extension of railways, a great field for European mineral enterprise *.

A large portion of it, however, is at present covered with heavy jungles. Roads cannot be said to exist, except for small native carts, even the main road from the Sudder Station of Perulia to the railway-station at Raneegunje being little more than a mere track; and in many parts not only is the population small, but the want of water severely felt in the hot months.

The climate in the cold weather is all that could be wished for; but about the end of March it begins to get too warm to live in tents, and the hot winds from the north-west impart an appearance of arid sterility to the scene. This, the winter time for the vegetation, is marked by all the trees and shrubs losing their leaves; the jungles, dense and almost impervious before, are now laid under contribution to supply the famous "Tusseh" silk, the cocoons of which, in the absence of foliage, are easily seen hanging to the boughs of the trees. The wild animals, deprived of their usual cover, retreat to the hills and caves amongst the rocks. Birds are at this period very scarce; and for a space of about three weeks the whole aspect of nature seems changed. Winter in look, but more than summer in heat, with but scanty shade for one's tent, it would be unbearable if prolonged for any length of time. A change, however, soon comes, the all-devouring element of fire sweeps through the jungles, and leaves them black and scorched; a heavy thunderstorm generally succeeds, and the first intimation of spring is the bright scarlet blossom of the pullas (*Butea frondosa*) and other trees, whose gorgeous hues, unrelieved by foliage (which does not appear until this tree has ceased flowering), contrast strongly with the general want of vegetation. Soon others begin to flower, while on some the leaves appear as if by magic; and in less than a fortnight the jungles are of a bright green again, and so powerfully scented with the flowers of the sâl and other trees that the sensation is rather sickening. With the opening leaves and flowers appear numberless birds: many have come from far to breed, others doubtless for the sake of the plentiful insect repast afforded by the fresh vegetation. The species of Honey-suckers and Flower-peckers are especially numerous, and flit about from tree to tree in thorough enjoyment.

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* *Vide* 'Memorandum on the Geological Structure and Mineral Resources of the Singbhoom Divu,' by Capt. Haughton, J. A. .S, No. 2 of 1854.

Fruits and berries are of course very scarce; and the bears and other denizens of the jungles would fare badly at this season, were it not for the beneficent mhowa-tree, whose wax-like flowers, produced long before the leaves, fall to the ground, and are not only assiduously gathered up by the lower classes of natives for the purpose of distilling spirit therefrom, but are eagerly sought for by bears, deer, Peafowl, Jungle-fowl, and several other birds.

But to turn more to our immediate subject, the Ornis of the district, I should be inclined to consider birds to be its distinctive feature in animal life. They abound more especially in the hot and rainy (?) months, at which seasons the dense jungles afford resting-places to many species the *locus* of whose nidification has long remained a mystery. The species are in most cases known. I am not aware of my having come across a single new one; but that is not so much to be wondered at when I mention that Mr. Blyth has before now collected on the southern border near Midnapore; and Col. S. R. Tickell, formerly in government employ at Chaibassa, in Singbhoom, and well known to science as an ardent ornithologist, has detailed the result of some years' collections made in this district, in his list of the Birds of Dhulbhun or Dhulbhoom, and Borabhun or Burrabhoom, which are the names of two of the *pergunnahs* (counties, so to speak) of the district; and as they comprise the greater part of the more jungly portion, it is not likely that many of the birds have escaped the notice of these two well-known ornithologists.

Awaiting a further examination of some specimens of *Raptores* in my collection, I have omitted them for the present, and begin with the *Insessores*. The arrangement followed is that adopted by Dr. Jerdon in his 'Birds of India'; and the numbers used are the same as in that work.

82. HIRUNDO RUSTICA. Common Swallow.

Darjeeling collection, 1862; Maunbhoom, 1864–65, where both young and old are very common at Ambekanuggur in January and February, hawking over rice-kates and near tanks. About sunset they all fly away to the north-west; but I never could find any of their roosting-places. They totally vanish by the end of February, and even earlier appear somewhat locally distributed.

85. HIRUNDO DAURICA. Red-rumped Swallow.

Maunbhoom; Rognathpore, 1864; Ambekanuggur, 1865. I found it tolerably common at the latter place, in small parties, hawking over the rice-kates. It flies higher and more steadily than *H. rustica*, with which it is frequently seen associated. The stripes on the breast present a more distinctive feature in this bird than perhaps the red rump from which Dr. Jerdon has given it an English name.

100. CYPSELUS AFFINIS. Common Indian Swift.

Common at Barrackpore, where it builds in outhouses at the station; and a large colony have taken up their abode in the stand on the race-course, where they breed yearly in July and August. Rare in Maunbhoom, although seen in Perulia itself. This bird is especially abundant at Fort William, Calcutta, in May.

102. CYPSELUS BATTASSIENSIS. Palm-Swift.

Common both at Barrackpore and in Maunbhoom. Wherever the Palmyra Palm (*Borassus flabelliformis*) is found planted, there, as a rule, will also be several of this species associated with it.

104. DENDROCHELIDON CORONATA. Indian Crested Swift.

Occurs in Maunbhoom, but is locally distributed. At Beerachalee, in April, I found a colony in a mango-tope, close to a village, in a tolerably open and cultivated country, in which were several large tanks. Whether they intended to breed there I am unable to say, as I never saw them perch. They are very graceful in their movements on the wing; and the call, as mentioned by Dr. Jerdon, is very like that of a Parrakeet.

I expect that two or three species of the Swallows and Swifts, which have been procured before by Col. Tickell in Chota Nagpore, have hitherto escaped my notice; but I hope that further research will supply the deficiency.

109. Caprimulgus albonotatus. Large Bengal Night-jar.

Called "Khallpêcha" in Maunbhoom, where it is more frequently heard at night than seen. The note, as mentioned by Dr. Jerdon, is somewhat like striking a plank with a hammer, only that the sound has generally somewhat of a metallic ring. I have procured the eggs at the end of March or beginning of April; they are as described by Capt. Hutton. This species appears to be very locally distributed. I have nowhere found it, as mentioned by Col. Tickell, "extremely common in the jungles." Dr. Jerdon's description of it is somewhat meagre. This bird sits lengthways on the bough of a tree.

112. Caprimulgus asiaticus. Common Indian Night-jar.

Abundant in Maunbhoom, where it is called "Kupcha pêcha." I have procured the eggs early in April. The bird is not seen in trees; and I do not think it ever perches.

114. Caprimulgus monticolus. Franklin's Night-jar.

Called "Phurruck pêcha" in Maunbhoom, where it is extremely plentiful in certain localities, apparently replacing *C. asiaticus*, which, again, is common where *C. monticolus* is rare. This bird may be seen of an evening flying slowly over the jungle, at some height from the ground, uttering its peculiar call of "tzit," "tzit," sounding as if at one moment close by, at another some distance off. Its appearance whilst thus engaged is much like that of a hawk beating over the ground. It also utters this call from the bough of a tree. I found it very plentiful of an evening at Kashingur, feeding in the rice-kates, chiefly on *Coleoptera*.

It then frequently settles on the ground; but I have never flushed it from the ground when beating for game in the daytime, as is often done with *C. asiaticus.* It breeds in the beginning of April or end of March. Its eggs, intermediate in size between those of the last two species, are of much the same colour. I presented specimens of eggs of these three species of *Caprimulgi* to the Zoological Society in 1864 (P. Z. S. 1864, p. 375).

116. HARPACTES HODGSONI. Red-headed Trogon.

Darjeeling collection, 1862. Found in heavy timber-trees in the valley of Little Rungeet River. *H. fasciatus* was procured by Col. Tickell in Dhulbhoom, in Maunbhoom; but I have not yet seen a specimen.

117. MEROPS VIRIDIS. Common Indian Bee-eater.

Common at Barrackpore in the cold weather, arriving about the end of October. Breeds in Maunbhoom, where it is tolerably common, at the beginning of April. The eggs, two in number, are very round and of a pure clear white. The nest-hole is excavated in the ground.

118. MEROPS PHILIPPENSIS. Blue-tailed Bee-eater.

Found at Barrackpore only during the rains, from July to the end of October, and is then in moulting-plumage. When the cold weather sets in about the beginning of November, it disappears, and is replaced by *M. viridis.*

123. CORACIAS INDICA. Indian Roller.

Common in Maunbhoom; more so towards the beginning of the hot weather. Is said by the natives to breed there in holes of trees; but I have not hitherto procured the eggs. It breeds in the station of Bancoorah in April. The kind of trap called a *chou-guddi,* described by Dr. Jerdon under the notice of this bird, is frequently used by the natives of Maunbhoom, but chiefly for the capture of *Ruticilla rufiventris* and *Thamnobia cambayensis.*

127. HALCYON LEUCOCEPHALUS. Brown-headed Kingfisher.

I have only observed this fine bird in the neighbourhood of

Barrackpore at the beginning of and during the cold weather. Its legs are more of a coral-red than "dull scarlet," as described.

129. HALCYON FUSCUS. White-breasted Kingfisher.

Is tolerably common near Barrackpore, and is the only species of Kingfisher, besides *Alcedo bengalensis,* that I have hitherto met with in Maunbhoom.

134. ALCEDO BENGALENSIS. Common Indian Kingfisher.

Is the most abundant species both at Barrackpore and in Maunbhoom.

136. CERYLE RUDIS. Pied Kingfisher.

Appears to be the common species of Lower Bengal.

137. CERYLE GUTTATA. Large Pied Kingfisher.

Darjeeling collection, 1862, when it was procured on the Great Rungeet River.

140. HOMRAIUS BICORNIS. Great Hornbill.

Darjeeling, 1862. Frequently seen in pairs in the Great Rungeet valley, at low elevations in the heavy forest-jungle near the river.

141? HYDROCISSA CORONATA. Pied Hornbill.

Either this species or *H. albirostris* is common in Maunbhoom, especially on the banks of rivers. Invariably seen in flocks of seven or eight in high trees, on hills if they are near water, or on the large forest fruit-trees, such as the koochila (*Strychnus nux-vomica*), which grows luxuriantly on the banks of the Cossye river. They are so extremely wary, that in two seasons I have only been able to procure two specimens. They apparently breed in the district.

144. MENICEROS BICORNIS. Common Grey Hornbill.

Not common in Maunbhoom, but occasionally seen solitary on high trees in tolerably open country.

146. ACEROS NIPALENSIS. Rufous-necked Hornbill.

Darjeeling collection, 1862. Plentiful in the interior of Sikkim, at an elevation of from 5000 to 6000 feet, in flocks of a dozen or more. I procured several at Rinchingpoong.

147. PALÆORNIS ALEXANDRI. Alexandrine Parrakeet.

Common in the hilly parts of Maunbhoom. It flies high and solitary, departing early in the morning and returning at night to roost on trees on the hills, having probably, as mentioned by Mr. Blyth, gone a considerable distance for its food during the interval. Its call, uttered on the wing, is particularly harsh and loud. Known as "Chundanon" in Maunbhoom.

148. PALÆORNIS TORQUATUS. Rose-ringed Parrakeet.

Common at Barrackpore in July, where large flocks were seen in 1864 coming regularly every evening to roost in the Palmyra palms beyond the railway-station. These flocks consisted chiefly of young birds. It is found also in Maunbhoom, though sparingly distributed. I obtained a nest with three eggs, at Baramussia, on 1st March, 1865: these are nearly 1·2 inch in length, and barely 1 inch in breadth. Called "Teea tota" in Maunbhoom.

149. PALÆORNIS ROSA. Rose-headed Parrakeet.

Common in Maunbhoom, where it is known as "Teea-tota," and is invariably seen in flocks. In the cold weather, December and January, it is most abundant in the hilly portions; but as the breeding-season advances, it becomes more plentiful and is found everywhere. I procured a nest with four eggs, from a hole in a tree, in March, and several young birds later. The eggs are white, round and blunt at the ends, in length ·9 inch, by ·8 inch broad. Numbers of young birds are taken by the natives, and reared by hand; and a large proportion of those imported into Calcutta, nominally from the Rajhmahal Hills, probably come from this district. It is the only Indian Parrakeet I know of which, in addition to the usual call, possesses a pleasing warbling song. This I have often heard, in the breeding-season, from a flock passing overhead, or on the point of alighting on a tree, the topmost branches of which are almost invariably chosen. After a little chattering and warbling, they fly off again. The flight is particularly swift, as mentioned by Dr. Jerdon, who, however, does not notice a peculiarity in the flight of most Indian Parrakeets, and especially of this one—namely that, when on the wing, the bird turns from side to side like a badly balanced arrow.

The young of this species are at first covered with a light grey down, through which the green feathers gradually appear. They are able to fly in about fifteen days after they are hatched. They then, together with their parents, scour the country in search of food, which at that time of year consists chiefly of buds of trees, together with whatever fruit may be in season. The bird is called "Phooltoosee tota" in Maunbhoom.

155. PICUS MAJOROIDES. Darjeeling Black Woodpecker.

Darjeeling collection, 1862.

156. PICUS CATHPHARIUS. Lesser Black Woodpecker.

Darjeeling collection, 1862.

160. PICUS MAHRATTENSIS. Yellow-fronted Woodpecker.

Found in Maunbhoom, but very locally distributed. I saw a pair once only in the jungle, searching a pullas-tree (*Butea frondosa*) which was then (March) in full flower and without leaves. A female, with three white eggs, was taken from a hole in an aisun-tree (*Terminalia alata*), and brought to me at Baramussia on the 5th March. There was no nest. The eggs are slightly elongated, ·75 inch long, by rather more than ·62 inch broad. I have since procured one or two specimens, which were captured with bird-lime; but I have nowhere hitherto found it common.

The following is a description of the female:—Length 7 inches; wing 3·88; tail 2·5; tarsus ·62; foot 1·5. Irides dull crimson. Bill and skin round the eyes slate-coloured, the former much lighter beneath. Legs dark slaty-blue; claws blue-black. The head is clothed with a silky crest, erectile at will, of dull yellow brown, lighter on the forehead, and changing to brown on the nape. A white streak from the corner of the eye curves round to the shoulder; below this is a brown semicircle, the two extremities of which meet on the breast; and a whitish patch, from beneath the bill to the middle of the breast, divides the brown. Lower part of the breast and belly brown and rustywhite, enclosing a crimson patch which extends from the abdomen to the vent. The under tail-coverts consist of lanceolate feathers, brown, with white edges. Called "Surrasootee" in Maunbhoom.

173. CHRYSOPHLEGMA FLAVINUCHA. Large Yellow-naped Woodpecker.

Darjeeling collection, 1862.

176. VENILIA PYRRHOTIS. Red-eared Bay Woodpecker.

Darjeeling collection, 1862.

178. MICROPTERNUS PHÆOCEPS. Bengal Rufous Woodpecker.

Maunbhoom, 1864. Only one specimen, a female, seen.

180. BRACHYPTERNUS AURANTIUS. Golden-backed Woodpecker.

This is the common species about Barrackpore. A specimen or two procured in the Tubee Hills, in Maunbhoom, are referrable to this species or *B. chrysonotus.*

186. VIVIA INNOMINATA. Speckled Piculet.

Darjeeling collection, 1862.

188. YUNX TORQUILLA. Common Wryneck.

Perulia and Kashneghur; Maunbhoom in March 1864. Seen also near Barrackpore in October.

191. MEGALÆMA VIRENS. Great Barbet.

Darjeeling collection, 1862.

193. MEGALÆMA CANICEPS. Common Green Barbet.

Not common in Maunbhoom, where it is called "Sonterar." Frequents high trees in jungle, near rivers or on hills, where it is often heard. A pair shot, in March, at Beerachalee were feeding on the shoots and buds of the banyan (*Ficus indica*). Breeds towards the end of March. At the beginning of April two young birds and an addled egg were brought. There is no nest, as it simply uses the hollow of a tree. The young are quite naked for some days after they are hatched. I preserved them in spirit, as they require examination. The egg is elongated and white.

Dimensions.—♂ Length 10·5 inches; tail 3 inches; wing 4·62 inches; expanse 15·5 inches; tarsus ·88 inch.

♀ Length 10·12 inches; tail (worn) 2·75 inches; wing 4·75 inches; expanse 15·5 inches; tarsus 1 inch.

Bill pinkish-brown; orbital skin orange-yellow; eyelid lighter yellow; legs dull yellow; claws greenish horn-colour.

195. Cyanops asiatica. Blue-throated Barbet.

Collected at Darjeeling in 1862. The common species about Barrackpore and the neighbourhood of Calcutta, where specimens are always procurable. It has not been found hitherto in Maunbhoom.

196. Cyanops franklini. Golden-throated Barbet.

Darjeeling collection, 1862.

197. Xantholæma indica. Crimson-breasted Barbet.

Rare about Barrackpore, but so extremely common in Maunbhoom that its call is heard everywhere, and at all hours; it is known as "Phoouk bussunt." This species taps trees with its beak. It lays its eggs in a hole in a decayed bough, which it excavates for itself. This fact, more than the search for insects, will probably account for its tapping propensities. Breeds in Maunbhoom at the beginning of April. The eggs are generally three in number, white, and much elongated: length 1 inch; greatest breadth ·62 inch.

A bough was brought to me, which it had excavated and formed into a nest. The length of the hole from aperture to bottom was 7 inches, and its diameter about 3. There was no nest at the bottom, the eggs being laid on the wood, which was hollowed out in an oval shape. It seems always to select the *under*side of a bough to commence operations on.

Length 6 to 6·5 inches; wing 3·25 inches; tail 1·5 inches. Bill blackish above, lead-coloured underneath, getting lighter where it meets the yellow plumage of the throat.

199. Cuculus canorus. European Cuckoo.

I procured one specimen at Darjeeling in 1862.

201. Cuculus poliocephalus. Small Cuckoo.

Darjeeling collection, 1862.

205. Hierococcyx varius. Common Hawk-Cuckoo.

Observed in Maunbhoom, where it was rare, and also at Barrackpore in October.

208. Polyphasia nigra. Plaintive Cuckoo.

Maunbhoom in April, but locally distributed. It probably breeds there.

209 ? Polyphasia tenuirostris. Rufous-bellied Cuckoo.

At Barrackpore, in October 1864, I shot a young male which is probably referable to this species.

212. Coccystes melanoleucus. Pied Crested Cuckoo.

I procured a solitary specimen at Barrackpore, September 28, 1864.

214. Eudynamis orientalis. Indian Koel.

Very common at Barrackpore in September 1864; but the October cyclone must have destroyed numbers, for I saw but few afterwards. It is found throughout Maunbhoom in small numbers, frequenting the thick trees in the neighbourhood of villages, but appearing to avoid the jungles.

217. Centropus rufipennis. Common Coucal.

Tolerably common at Barrackpore as the cold weather approaches; but I do not think it is a permanent resident there. In Maunbhoom it apparently breeds; for young birds believed to be of this species were brought to me at the beginning of April, at which time it is tolerably common, more so than a month previously. The young were quite naked, with black skins. There were two of them in the same nest. One had the whole of a small snake in its stomach, which was consequently much distended. This, added to its colour, made it look very repulsive.

222. TACCOCUA AFFINIS. Central Indian Sirkeer.

I think that my Maunbhoom specimens are referable to this species. Dr. Jerdon's descriptions, however, of all the members of the genus are very short and unsatisfactory. In Maunbhoom they frequent the most hilly and jungly places, and, from their quiet, unobtrusive manners, are seldom seen except when beating for large game. On such occasions to fire for the sake of a specimen is to incur the certain wrath of the rest of the party, who, roused up by the report, look out with eager eyes for the expected bear, and *bless* the ornithologist afterwards for causing a false alarm.

223. ARACHNOTHERA MAGNA. Large Spider-hunter.

Darjeeling collection, 1862.

228. ÆTHOPYGA IGNICAUDA. Fire-tailed Honey-sucker.

Darjeeling collection, 1862.

229. ÆTHOPYGA NIPALENSIS. Maroon-backed Honey-sucker.

Collected at Darjeeling in 1862. Frequents the low bushes close to the station on the new cart-road.

231. ÆTHOPYGA SATURATA. Black-breasted Honey-sucker.

Darjeeling collection, 1862.

232. LEPTOCOMA ZEYLONICA. Amethystine Honey-sucker.

Tolerably common in the neighbourhood of Barrackpore, but more so in Maunbhoom, where it breeds in March and April, and is known by the name "Ungatoonee." Two nests were brought to me on the 27th March, from which I take the following description:—Bottle-shaped, the entrance from one side near the top, its aperture circular, with a dome over it. Composed outside of bits of bark and fibres, firmly agglutinated with spiders' web; the top of the nest attached firmly to a small twig, from which it hangs suspended and exposed to every breeze, which must shake the nest severely and cause it to swing, but without damaging the eggs, owing to the peculiar elasticity of the silky webs employed. Extreme length of nest 6 inches; breadth 2·5 inches; aperture 1 inch in diameter; circumference, just below the entrance, 7·5 inches. The eggs were three in number, much elongated at the smaller end. Ground-colour dirty white, covered with minute ashy-brown specks, which combine so as to form a zone near the blunt end. Both nest and eggs very much like those of *Arachnechthra asiatica*; but the former may be distinguished by its slightly smaller size, and the eggs by the zone. The eggs of both species vary considerably in colour, and, after a careful examination of fully forty nests and eggs of both species, I find it very difficult to discriminate between them, or draw an exact line of difference. The only way I could be certain of the identity was by having the females caught by bird-lime at the entrance of the nest. From captures made in this way, I find that the male of this species takes part in incubation—a fact not observed in *A. asiatica*. Three of the eggs I obtained measured respectively ·65, ·68, and ·56 inch in length, and in breadth ·43, ·46, and ·37 inch. The young, when fledged, are like the female, but with brighter yellow on the breast.

234. ARACHNECHTHRA ASIATICA. Purple Honey-sucker.

Very common in Maunbhoom, where, like the last, it is also called "Ungatoonee"; but I have not observed it at Barrackpore. The male has a very shrill, clear song, which can scarcely be called "a feeble but sweet chirping note," as it is by Dr. Jerdon (vol. i. p. 371), apparently on Mr. Blyth's authority. This is generally uttered from the topmost spray of a high tree, sometimes on the wing when moving from one tree to another. The bird is often seen associated with the last species on flowering trees and shrubs in the jungles. It breeds in March and April. The nest is much like that of the English Wren, but, instead of being placed against a tree, is pendent from the end of a bough, and sways to and fro in the wind. Its length is from 5·5 to 6·5 inches; its breadth from 2·5 to 3 inches, with a circular aperture on one side near the top. In shape it is nearly oval, and is very softly but strongly made up of bits of leaves, cotton-wool, bents, and the like, well interlaced with spiders' webs, which substance plays an important part in the structure, and serves to hang it by. The interior of the nest is lined with the softest cotton or other accessible material, and is slightly larger at the bottom than the top. There is a dome over the entrance. The eggs, as mentioned by Dr. Jerdon, are of a greenish-grey tinge, with dusky spots. The usual number is three.

Having had so many nests and eggs of this species brought to me in Maunbhoom, with the female bird in most cases caught on the nest, I can assert with confidence that during the breeding-season this sex does not put on the black livery of the male, but retains her own sombre garb. I believe this species migrates to Maunbhoom and the Chota Nagpore district for the purpose of nidification.

238. Dicæum minimum. Tickell's Flower-pecker.

Tolerably common in Maunbhoom, especially in the breeding-season. It has a weak piping note, and is met with in heavy jungles in thick trees, busily engaged seeking amongst the leaves for insects. The plumage is of such a dull colour, and the size of the bird so small, that it is not easy to get specimens. It breeds earlier than the last two species. The first nest was brought to me at Beerachalee on the 16th March, with three pure white eggs, which measure ·6 inch by ·4 inch. The nest is much like that of *Arachnechthra asiatica*, and of the same description, being suspended by spiders' web from a bough; but it is a good deal smaller, rather less oval and more round, and the inside more carefully constructed. It is lined with the softest materials, so as to put me much in mind of the cocoon of the tusseh silk-worm (*Antheræa paphia*), it was so smooth and well made. In length it was 3·5 inches; in breadth 2 inches; and the circumference 7 inches. Several nests, with young ones fully fledged, were brought to me about the beginning of April. There is no dome over the entrance of the nest.

240. Piprisoma agile. Thick-billed Flower-pecker.

This bird cannot be considered common in Maunbhoom, although it is certainly tolerably abundant during the breeding-season, which is in March and the beginning of April. The first nest was brought to me on the 26th March, with only two eggs, the usual number being three. The nest is very peculiar—a pocket-like structure suspended from a small bough which forms the roof, the entrance being from one side near the top. It is composed entirely of spiders' web and other silks, with which a pinkish-brown fluff (probably from some tree in flower) is felted together, making the nest look entirely of that colour. There is no lining; only the material employed is denser at the bottom than at the top of the nest. The great peculiarity is that the nest is as if woven in one piece, and, like a bit of cloth, can be shaken or compressed without doing it any injury. The length is 3 inches; breadth 2 inches; entrance-hole 1·5 inch long, by ·87 inch broad. The eggs are moderately elongated, of a light pink ground-colour, blotched indistinctly with pink spots, more frequent and massed at the obtuse end. They are large for the size of the bird, their length being ·62 inch, and their breadth a little over ·37 inch.

The dimensions of a female caught on the nest are—whole length 3·87 inches; tail 1·15 inch; wing 2·25 inches; tarsus barely ·5 inch; expanse 6·5 inches. Bill bluish lead-colour; lips a little darker. I am inclined to think that this species feeds occasionally on the ripe fruit of the banyan and other *Fici*.

246. ? SALPORNIS SPILONOTA. Spotted Grey Creeper.

Although I have hunted long for this species in Maunbhoom, I have never yet seen anything like it except on one occasion; and then I may have been mistaken, as I could not secure the specimen.

248. SITTA HIMALAYENSIS. White-tailed Nuthatch.

Darjeeling collection, 1862.

254. UPUPA EPOPS. European Hoopoe.

"Doobchirka" in Maunbhoom, where it is rarely seen, and then in pairs. Dimensions of a specimen killed at Budhpore, March 18th, 1865:—From tip of the bill to end of the tail 11 inches; from top of crest to end of tail 12 inches; wing 6 inches; tail 4 inches. Bill at front 2·15 inches; tarsus ·87 inch. From eye to top of the crest 2·75 inches. Bill dark horn-colour, fleshy at base; legs greenish-brown.

256. Lanius lahtora. Indian Grey Shrike.

Rare in Maunbhoom.

260. Lanius hardwickii. Bay-backed Shrike.

Occasionally seen in Maunbhoom, but appears to be rare.

261. Lanius cristatus. Brown Shrike.

"Khurkuteea." Migrates to the neighbourhood of Barrackpore in the cold weather: I procured my first specimen there on 28th September, 1864. Not common in Maunbhoom.

265. Tephrodornis pondiceriana. Common Wood-Shrike.

Appears to come to the Maunbhoom district (where it is called "Arsun chota") for the purpose of breeding. I procured the nest and eggs early in April, and the young were nearly fledged by the 20th of that month. They appear to come, year after year, to particular localities to breed. Several nests were brought me from the neighbourhood of Kashurghur both in 1864 and 1865, whereas none were seen elsewhere. The nest is very small for the size of the bird, and the material of which it is composed closely resembles the bird's plumage in colour. The nest is round and very shallow, something like a Chaffinch's, being very neatly made; diameter inside 2 inches, depth 1 inch; composed of grey fibres, bits of bark, grass, and the like, cemented with spiders' web. The eggs are two in number, greenish white, spotted with brown and slate-coloured dots, which in most specimens form a well-defined zone round the thickest part of the egg, leaving both ends without marks. Length of the egg ·75 inch; breadth ·59 inch. This bird was not observed in Maunbhoom except during the breeding-season.

267. Hemipus picatus. Little Pied Shrike.

Darjeeling collection, 1862.

269. Volvocivora melaschistus. Dark-grey Cuckoo-Shrike.

Darjeeling collection, 1862; Maunbhoom in 1864 and 1865, where it was occasionally seen, but was by no means common.

271. PERICROCOTUS SPECIOSUS. Large Minivet.

Darjeeling collection, 1862. Tolerably plentiful at Maknee, in Maunbhoom, in January 1865, in flocks nearly all composed of females or young males. I observed a flock, early one morning, feeding on, or clinging to, the stalks of a grass close to the ground. In the daytime they are very actively engaged in searching for insects in thick trees: the various species of *Fici* appear to be preferred. Usual length from 8·5 to 8·75 inches.

273. PERICROCOTUS BREVIROSTRIS. Short-billed Minivet.

Darjeeling collection, 1862. In Maunbhoom I found it in the same locality and at the same time as the last species, in small flocks, chiefly frequenting mango-trees. The female has a yellow wing-band, the abdomen white, and the outer tail-feathers with more or less yellow, most on the outer pair of lengthened ones. Both this and the last species appear to prefer the well-wooded, jungle-covered hills. I have not seen them elsewhere, with the exception of an occasional straggler.

274. PERICROCOTUS SOLARIS. Yellow-throated Minivet.

Darjeeling collection, 1862.

276. PERICROCOTUS PEREGRINUS. Small Minivet; "Raja-ranee"*.

Tolerably common in flocks, on high trees, in the hilly parts of Maunbhoom, but not confined to these, as it is occasionally met with all over the district, wherever suitable localities present themselves.

278. DICRURUS MACROCERCUS. Common Drongo, or King-Crow.

"Dhenkchooar" and also "Pābdhooa" in Maunbhoom, where it is common, especially when the pullas-tree is in flower, feeding greedily, not, I imagine, actually on the flowers themselves, but on the insects attracted by them. I think that *D. longicaudatus* ought also to be included amongst the Maunbhoom birds, as I have possibly confounded this species with it on one or two occasions.

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* "Raja-ranee," *i. e.* "King and Queen," with reference probably to the difference of colour of the sexes. I think the name is used indiscriminately for all the species of *Pericrocoti* known in Maunbhoom to the natives.

280. Dicrurus longicaudatus. Long-tailed Drongo.

Darjeeling collection, 1862.

281. Dicrurus cæerulescens. White-bellied Drongo.

Tolerably common in the well-wooded hilly parts of Maunbhoom, but very wary and difficult of approach. It is always seen solitary.

284. Edolius paradiseus. Large Racket-tailed Drongo, or Bhimraj.

Observed on one or two occasions near the Cossye River, in Maunbhoom; but I could not secure a specimen.

286. Chibia hottentota. Hair-crested Drongo.

Darjeeling collection, 1862. Observed on several occasions in Maunbhoom, on the semul (*Bombax heptaphyllum*) in flower, and also in heavy tree-jungle near streams. It is very wary and difficult to approach, and is nowhere common. It is said by the natives to breed in that district.

187. Artamus fuscus. Ashy Swallow-Shrike.

I observed a small party, and collected specimens, near Darjeeling, at an elevation of about 5000 feet, in May 1862. After swooping about for some time, they settled on the boughs of a dead tree. I also obtained it in the neighbourhood of Barrackpore, in January 1864.

288. Tchitrea paradisi. Paradise-Flycatcher.

I procured a few specimens of this beautiful bird at Kashurghur, in April 1864. Amongst them were two full-grown males, in white plumage. In one, the central tail-feathers were black-shafted and 15 inches in length. A third specimen was a young male partially assuming the white plumage of the adult bird; a portion of the long tail-feathers were white, the rest chestnut. I did not see a single specimen in 1865.

There seems to be no doubt that this and numerous other species of birds migrate to Maunbhoom when the new leaves come on the trees at the end of March. About the middle of that month the jungles are comparatively bare, all the old leaves having fallen; and they are then set fire to by the natives. In a fortnight or so the fresh vegetation springs up (as I have already mentioned in the introduction to this paper), and new species of birds appear, most of which at once set to work making their nests. The fresh vegetation and consequent increase of insect life has, no doubt, a great deal to do with the arrival of some species, which do not breed until much later.

290. Myiagra azurea. Azure Flycatcher.

Procured in October, in the neighbourhood of Barrackpore, whither it probably migrates for the cold months only. In Maunbhoom it is frequently seen in suitable localities in January and February, but does not apparently make a lengthened stay.

291. Leucocerca fuscoventris. White-throated Fantail.

Darjeeling collection, 1862. I observed a Fantail, probably of this species, in the neighbourhood of Barrackpore, in October 1864.

295. Cryptolopha cinereocapilla. Grey-headed Flycatcher.

I came across this pretty little bird for the first time at Ambekanuggur, in Maunbhoom, in December 1864, and found it tolerably plentiful in high trees near the Cossye River. It occasionally visited the mango-tope in which our camp was pitched, frequenting the low boughs near the ground; but it was generally rather shy.

296. Hemichelidon fuliginosa. Sooty Flycatcher.

Darjeeling collection, 1862.

301. Eumyias melanops. Verditer Flycatcher.

This is the common species at Darjeeling, where it is abundant in the station, and goes by the name of the "Blue Bird." I found it tolerably common in Maunbhoom, in the cold weather.

312 ? Muscicapula sapphira. Sapphire-headed Fly-catcher. A specimen procured in Maunbhoom in 1864 is, I think, referable to this species.

314. Niltava sundara. Fairy Blue Chat. Darjeeling collection, 1862.

316. Niltava grandis. Large Blue Chat. Darjeeling collection, 1862.

319. Siphia strophiata. Orange-gorgeted Flycatcher. Darjeeling collection, 1862.

323. Erythrosterna leucura. White-tailed Flycatcher. "Tirkee dama" in Maunbhoom, where it is common in the cold weather; also at Barrackpore.

324. Erythrosterna pusilla. Rufous-backed Flycatcher. Darjeeling collection, 1862.

326. Erythrosterna maculata. Little Pied Flycatcher. Darjeeling, 1862; Maunbhoom 1864 and 1865, where it was rare, though occasionally seen in cold weather. It frequents moderately large trees in the jungles.

327. Tesia castaneocoronata. Chestnut-headed Wren. Darjeeling collection, 1862.

329. Pnoepyga squamata. Scaly-breasted Wren. Darjeeling collection, 1862.
I procured a Wren very much like the English species, on the top of Mount Tongloo, in 1862, but am not sure whether it was that bird or *Troglodytes nipalensis*, Hodgson.

343. Myiophonus temmincki. Yellow-billed Thrush. Darjeeling collection, 1862.

344. Hydrornis nipalensis. Large Nepal Ground-Thrush. Darjeeling collection, 1862.

351. PETROCOSSYPHUS CYANEUS. Blue Rock-Thrush.

Noticed at Sahebgunje, on the Ganges, in 1861.

355. GEOCICHLA CITRINA. Orange-headed Thrush.

Found in Maunbhoom in 1865, on two occasions. It is rare and solitary, frequenting low thickets, and perching in trees when flushed.

361. MERULA BOULBOUL. Grey-winged Blackbird.

Darjeeling collection, 1862.

362. MERULA ALBOCINCTA. White-collared Ouzel.

Found abundantly on Mount Tongloo, in 1862, where they were in flocks, busily feeding on the rhododendron-flowers. The beaks of those I killed were covered with pollen. Specimens of both sexes were procured.

370. OREOCINCLA MOLLISSIMA. Plain-backed Mountain-Thrush.

Darjeeling collection, 1862.

371. OREOCINCLA DAUMA. Small-billed Mountain-Thrush.

A solitary specimen procured at Kashurghur, Maunbhoom, in 1864.

[To be continued.]

XXXIV.—*On a supposed New Species of Pheasant, of the Genus* Argus. By D. G. ELLIOT, F.Z.S., &c.

THE subjects of the following descriptions are contained in the collection of the British Museum, and are said to have come from Borneo, the specimens from which country, in Dr. Sclater's opinion (P. Z. S. 1863, p. 124), "may probably constitute local varieties." They seem, however, to possess characters sufficient to entitle them to specific distinction. I therefore venture to designate them as belonging to a new species, which I have much pleasure in naming after Mr. George Robert Gray, F.R.S., the distinguished ornithologist under whose care the magnificent collection of that institution is placed.

ARGUS GRAYI, sp. nov.

Bill horn-colour; base of upper mandible black. A narrow line of black hair-like feathers commences at the bill, and continues over the top of the head, down the back of the neck, elongated on the occiput so as to form a short crest; rest of the head and upper part of the neck bare. Lower portion of neck and upper part of the breast bright chestnut-red. Under parts entirely chestnut, darker on the flanks; each feather irregularly marked with white, bordered on each side with black. Upper portion of back and wings blackish, confusedly marked with white; rest of the back and upper tail-coverts dark buff, covered with round, black spots. The wings resemble those of *A. giganteus,* but are much darker, inclined to black, and have the ocellated spots much smaller. Tail black; the outer webs dotted with very small, and the inner webs with larger, white spots. The inner webs of the third and fourth feathers, near their tips, have the white marks very much enlarged, giving to this portion a light appearance; but there is none of the rufous colouring so conspicuous on the outer webs of the tail-feathers of *A. giganteus.* The long middle feathers of the tail are black on their outer webs for about half their width; the rest chestnut, dotted with small white spots; inner webs grey, also spotted with white, and growing lighter towards the edge.

The principal differences between this bird and *A. giganteus* consist in its deep red breast and underparts, bright chestnut of the lower part of the neck, the black tail, the small size of the ocellated spots, and also of the dots on the wings and tail, together with the prevalence of white on the back.

Another specimen, which appears to be a young male, has the lower part of the breast a yellowish brown, finely barred with black; the upper portion a light chestnut-red, like the more adult bird. The tail is mottled with brown, two of the feathers presenting the white spots.

This species makes the third now known of the genus—namely, *Argus giganteus*, *A. ocellatus*, and *A. grayi*. *A. ocel-*

latus was established by Bonaparte (Compt. Rend. xliii. p. 878) upon some long feathers of the wings and tail only, in the Paris Museum, the whole bird never having been obtained; but these feathers are so entirely and markedly different from those in the other two, as to leave but little doubt of their belonging to a separate species. A specimen of this bird would be a most desirable acquisition for any museum to obtain; and let us hope that, before very long, this deficiency may be supplied by some one of those venturesome naturalists who may make the Indian Archipelago and its surrounding lands the field of their researches.

XXXV.—*On the Distribution of Birds in Great Britain during the Nesting-season.* By A. G. More, F.L.S.

[Part III. Continued from page 142.]

PHASIANUS COLCHICUS (*Linn.*). Pheasant.
Provinces I.–XVII.
Subprovinces 1–37.
Lat. 50°–59°. Not native, but generally established.

Though not an indigenous bird, the Pheasant is so thoroughly established throughout Great Britain that it is included in every county list, and breeds regularly even as far north as Caithness. Still there is no doubt that if the protection bestowed on this favourite game-bird were withdrawn, its range would be considerably narrowed, though it is probable that the species would not become extinct in this country.

TETRAO UROGALLUS (*Linn.*). Capercally.
Provinces [XV.] [XVII.]
Subprovinces (29), (30?), (31), (34?), (35).
Lat. 56°–59°. "Scottish" type. Formerly also in Ireland.

Pennant, in his 'Tour in Scotland' (1769), tells us that the *T. urogallus* was formerly common throughout the Highlands of Scotland north of Inverness. Even at that date the bird had become very rare; and Pennant himself had seen only a single bird, which was "killed in the woods of Mr. Chisolme, to the north [? west] of Inverness."

The Rev. George Gordon informs me that the Capercally formerly inhabited the county of Elgin; and Mr. R. J. Shearer marks it as extinct in Caithness. This is the only independent testimony which I have obtained respecting the former distribution of this fine bird. A search in some of the old Scottish county-histories may bring to light some further details concerning the Capercally. Macgillivray, in the first volume of his 'British Birds' (p. 143), quotes an interesting passage from the 'Historia Scotorum.'

At present the bird seems to have become thoroughly reestablished in several parts of Perthshire, where it has increased rapidly within the last ten years, and is believed to have spread to the adjoining county of Clackmannan, as I learn from Dr. P. Brotherson.

TETRAO TETRIX (*Linn.*). Black Grouse.

Provinces I.–VI. VII.? VIII.–XVII.

Subprovinces 1, 2–6, (7), (9), (11), (12), 14?, 15, 16, 18?, 20–23, 24, 25–35.

Lat. 50°–59°. "Scottish" type. Not in Ireland.

Though found in the extreme south of England, the Black Grouse more properly belongs to the low birch-woods and heaths of the less elevated districts of Scotland. It breeds "occasionally" in Cornwall (*Mr. E. H. Rodd*). In Devon, Somerset, Dorset, Hants, Sussex, Surrey, Berks, Worcester (*Yarrell*), Shropshire, Stafford, Radnor (*Mr. Rocke*), North Wales "introduced and decreasing on the Beswyn mountains near Corwen" (*Eyton*), Cheshire, Lancashire, and both divisions of Yorkshire, and in all districts to the north of these, extending to Islay, Mull, Skye, &c., but not reaching the Outer Hebrides, nor is it found in Orkney or Shetland.

The Black Grouse has been successfully introduced in the neighbourhood of Lynn in Norfolk. Yarrell says that the progenitors of the birds at present inhabiting the heaths of Surrey and Berks were brought from Holland, though the species had previously been known as indigenous to the former county. A single nest found in Northamptonshire is recorded by Lord Lilford (Zoologist, p. 3278).

Mr. Selby describes the Black Grouse as increasing in Northumberland; and the same circumstance has been noticed coincident with the increase of plantations in several parts of Scotland. As Thompson remarks, the Black Grouse might probably be introduced to Ireland, but the attempts hitherto made have been unsuccessful.

LAGOPUS SCOTICUS (*Leach*). Red Grouse.
Provinces V.–XVIII.
Subprovinces 13–18, 20–37.
Lat. 51°–60°. "Scottish" type.

Colonel Newman tells me that the Red Grouse is plentiful on the hills of Monmouthshire. The bird also inhabits Hereford, Shropshire, Stafford, Radnor (*Mr. Rocke*), and Pembroke (*Mr. Tracy*). Breeds in Derbyshire, Lancashire, Yorkshire, and in every county north of lat. 54°, reaching the Outer Hebrides and Orkneys, but not occurring in Shetland.

LAGOPUS ALBUS (*Boie*). Ptarmigan.
Provinces [VII.?] [XII.] XIV.? XV–XVIII.
Subprovinces (18?), (25), 28?, 29, 32–36, (37).
Lat. 55°–59°. "Highland" type. Not in Ireland.

At present the Ptarmigan is confined to Scotland, though there are records of its having formerly inhabited Westmoreland and Cumberland. (See Pennant and other earlier writers.)

Heysham describes the Ptarmigan as having become, in his time, very scarce in Cumberland; and he cites "the lofty mountains about Keswick" as the only locality known to him.

There is a tradition of its former existence in Wales, but I have not been able to discover the original authority for this statement, which is repeated by both Macgillivray and Thompson, and in Graves's 'British Ornithology.'

My valued correspondent, Dr. J. A. Smith of Edinburgh, has copied for me, from a newspaper, a paragraph stating that the Ptarmigan inhabits the county of Peebles; but this is the only authority for its occurrence so far south on the mainland at present. The bird inhabits Islay and Jura (*Thompson,* B. Brit. ii. p. 45), Mull (*Mr. H. D. Graham*), Dumbarton (*Mr. R. Gray*), Argyle, Perth, and all the counties northward. Mr. John Macgillivray found the Ptarmigan sparingly in South Uist, and it has only recently been exterminated in Hoy.

PERDIX CINEREA (*Lath.*). Common Partridge.

Provinces I.–XVII.
Subprovinces 1–35.
Lat. 50°–59°. "British" type, or general.

Throughout Great Britain, being only less common where the land has not been brought into cultivation.

The Partridge is probably a colonist in the northern portion of its present range, having followed the progress of tillage.

Messrs. Baikie and Heddle inform us that it has been, within a few years, successfully introduced into the islands of Rousay and Shapinshay, in Orkney.

CACCABIS RUFA (*G. R. Gray*). Red-legged Partridge.

Provinces III. IV. VIII. X. XII.
Subprovinces 7, 8–12, 13 ?, 19, 20, 23, 25.
Lat. 50°–55°. Not native. "Germanic" type. Not in Ireland.

Introduced about one hundred years ago, the Red-legged Partridge has become very numerous in some of the eastern counties, where, in the struggle for life, it has been stated to have in some places nearly supplanted the Common Grey Partridge.

There must be some local influences that limit the range of the Red-legged Partridge in this country, since the attempts made to establish it in Dorset, Hereford, Derby, and East Yorkshire appear to have failed; nor has the bird hitherto spread to any of our south-western shires. I am informed by Mr. T. Gough that it has bred regularly of late years in Westmoreland.

The bird is returned as now breeding occasionally in Kent (*Mr. G. Jell*). In Essex, Herts, Oxford (occasionally), Bucks, Suffolk, Norfolk, Cambridge, Huntingdon (occasionally), Northampton (occasionally), Lincoln, Rutland (occasionally), and West York (very rarely).

The Rev F. J. Scott believes that it is established in the hills of Gloucestershire; but some confirmation of this last locality appears desirable.

COTURNIX COMMUNIS (*Bonn.*). Common Quail.

Provinces I.–XVII.
Subprovinces 2–8, 9, 10, 11, 12, 13, 14, 15, 17, 19–23, 24–29, 30, 31, 32, 35.
Lat. 50°–59°. "British" type, or general.

Thinly scattered, during the breeding-season, from the south of England to the very north of Scotland. Yet there are few counties in which the Quail is considered to breed annually; nor can these be grouped in any manner so as to show where the species is most numerous.

It has certainly decreased of late years in several districts, and this apparently not owing to any cause that can be discovered. In the west of Ireland the same diminution has been noticed. In former times I am informed that the Quail was reckoned as one of the regular winter visitors on the west side of the sister island, but it has not been so much observed of late years. It is still considered to breed annually about Belfast, and in county Armagh I have myself heard its note during the breeding-season. The bird is probably better known in the north-east of Ireland than in any part of England or Scotland.

If there is any difference, the range of the Quail seems to incline rather to the east side of Great Britain, as well as of Ireland, during the breeding-season. It seems to occur chiefly in the south of England during winter.

OTIS TARDA (*Linn.*). Great Bustard.

Provinces [II.] [IV.] [VIII.] [X.]
Subprovinces (4), (5), (6), (10), (11), (12), (19), (22).
Lat. 50°–55°. "Germanic" type. Not in Ireland.

In former times the Great Bustard was well known as inhabiting the downs of the south of England, the heaths in a few of the eastern counties, and the wolds of Yorkshire.

Its breeding-range included the counties of Wilts, Dorset (*Rev. J. H. Austen*), Hants, Sussex, Suffolk, Norfolk, Cambridge, Lincoln, and Yorkshire. Montagu tells us that "these birds were formerly found even as far north as Scotland," where, however, they were probably only accidental visitors.

Even at the date of Montagu's 'Supplement' (1813) the Bustard had nearly disappeared from the downs of Wiltshire. It seems to have lingered to a considerably later date in Suffolk and Norfolk, where some nests were found in 1832 and 1833 (Loudon's Mag. Nat. Hist. vol. vi. p. 150; vol. vii. p. 458; and vol. ix. p. 528). In Yorkshire the last egg was taken in 1816, and is now preserved in the museum at Scarborough.

Obs.—An egg, which can be hardly anything else than that of the Little Bustard (*Otis tetrax*, Linn.), was obtained by the late Mr. Wolley at Thurso, in 1848; and as a female Little Bustard was killed about the same date in that neighbourhood, the occurrence seems worth mentioning here (*J. Wolley in MS. penes A. Newton*).

Œdicnemus crepitans (*Temm.*). Stone-Curlew.
Provinces II.–V. VIII. X.
Subprovinces 4–12, 14, 19, 20, 22, 23.
Lat. 50°–55°. "Germanic" type. Not in Ireland.

Breeds in Dorset, Hants, Sussex, Kent, Herts, Oxford, Bucks (perhaps extinct), Suffolk, Norfolk, Cambridge, Worcester (*Blyth*), Lincoln, Rutland, Nottingham, and in both divisions of Yorkshire; but is described as rapidly decreasing in most of its localities.

I have no authority for its breeding in Devon, Essex, or Lancashire.

Charadrius pluvialis (*Linn.*). Golden Plover.
Provinces I. VI. VII.? VIII. X.–XVIII.
Subprovinces 2, 3, 17, 18?, 20, 22–38.
Lat. 50°–61°. "Scottish" type, or Northern.

Far more abundant in the north, and especially in Scotland, but breeds in small numbers in Devon and Somerset. In Pembroke (*Mr. Tracy*), and doubtless in North Wales, though I have no authority for Subprovince 18. Mr. Eyton writes that the Golden Plover is said to breed in the mountains above Chirk Castle; and Mr. O. Salvin has found the nest in Derbyshire.

The bird becomes more numerous on the moors from Yorkshire northwards, and is especially well known on all the Highland mountains.

Charadrius morinellus (*Linn.*). Dotterel.

Provinces [VIII.?] X.–XII. XV. XVII.
Subprovinces (20?), 23–25, 30, 31, 34, 35.
Lat. 54°–59°. "Highland" type. Perhaps in Ireland.

With respect to Derbyshire, Sir John Crewe informs me that he has often heard from his gamekeeper that it was quite easy, fifteen or twenty years ago, to shoot Dotterels, when they had young, on the Derbyshire hills bordering on Staffordshire. These hills are now nearly all under cultivation, and Sir John Crewe believes that the Dotterel no longer stays to breed, though small flocks are still seen in May.

The bird is well known to breed on several of the mountains in the English Lake district, where, it is believed, its localities extend to the three counties of Westmoreland, Cumberland, and Yorkshire. And the Rev. H. B. Tristram tells me that a few pairs linger on the borders of Durham and Cumberland; and that he has heard of nests being taken on the top of Cheviot, where he himself has seen the birds.

Macgillivray describes the Dotterel as breeding in the upland tracts of the counties of Forfar, Kincardine, Aberdeen, Banff, and Moray; he also speaks "of small flocks settling in the Lammermoor hills," so that it is possible the bird may breed in the south of Scotland.

Mr. T. Edward finds the nest in Aberdeen and Banff shires; and Mr. W. Dunbar marks the bird as breeding regularly in Sutherland and Caithness.

Charadrius hiaticula (*Linn.*). Ringed Plover.

Provinces I.–IV. VI.–XVIII.
Subprovinces 1–3, 5–8, 10, 11, 17–19, 21, 22, 24–38.
Lat 50°–61°. "British" type, or general.

More numerous in the north during summer, from the prevalence of suitable localities; but breeds throughout the coasts of

Great Britain, as well as on the margin of freshwater lakes, and even numerously on dry sandy warrens in the eastern counties.

Obs.—The Little Ringed Plover (*Charadrius curonicus,* Beseke) has been by some supposed to breed on the shores of Sussex and Kent, and eggs attributed to this species are preserved in several collections. But there is no doubt that these eggs, as well as most of the birds which have been recorded in Britain as *C. curonicus,* represent a smaller race of *C. hiaticula.* Certain it is that on the continent *C. curonicus* is described as frequenting principally fresh water and large rivers. The specimens which I have seen from Sussex seem scarcely distinguishable, except in size, from *C. hiaticula,* and very different from the true *C. curonicus,* which is well known to every practical ornithologist.

CHARADRIUS CANTIANUS (*Lath.*). Kentish Plover.
Provinces II. III.
Subprovinces 6, 7.
Lat 50°–52°. "Germanic" type. Not in Ireland.

One of the most local of our indigenous birds, breeding only in Sussex and Kent, in both of which counties it is very scarce.

VANELLUS CRISTATUS (*Meyer*). Lapwing.
Provinces I.–XVIII.
Subprovinces 1–38.
Lat. 50°–61°. "British" type, or general.

More numerous on the heaths and moors of the north, but is included in every county list as breeding regularly.

HÆMATOPUS OSTRALEGUS (*Linn.*). Oyster-catcher.
Provinces I.–IV. VI.–VIII. [IX.] XI.–XVIII.
Subprovinces 1, 2, 3, 4, 7, 8, 11, 17, 18, (19), (21), 24–26, 28–38.
Lat. 50°–61°. "Scottish" type.

In the south of England the Oyster-catcher is comparatively rare in summer; and though it breeds regularly in Cornwall and Devon, a few pairs only occur along the south coast; nor is it much more numerous on the eastern side of England. Thus, though ranging from extreme south to north during the breeding-season, it belongs more properly to the "Scottish" than to the "British" type.

Obs.—The Crane (*Grus cinerea,* Bechst.) is spoken of by Turner (Avium Historia, 1543) as breeding in this country. This author says, "earum pipiones ipse sæpissime vidi;" and an Act of Parliament, passed in 1533, made the taking of a Crane's egg an offence punishable with a fine of twenty pence. But the bird could not have long continued the practice of breeding with us, for to Sir Thomas Browne and John Ray it was only known as a winter visitant. As in several other cases, the bird's name remains, and in many parts of the country the Heron is commonly known as the "Crane."

ARDEA CINEREA (*Linn.*). Common Heron.
Provinces I.–XVIII.
Subprovinces 1–35, 37.
Lat. 50°–60°. "British" type, or general.

The Heron breeds in every subprovince, and in nearly every county from which I have received a list. It does not, however, nest in the Outer Hebrides, nor in Shetland, and only occasionally in Orkney.

BOTAURUS STELLARIS (*Steph.*). Common Bittern.
Provinces [II.–VI.] [VIII.] [X.–XV.].
Subprovinces (6), (8), (10–12), (15), (17), (19), (22–24), (26), (28), (29), (31).
Lat. 50°–58°. "English" (or British?) type.

Though recorded as having formerly bred in many different parts of the country, the Bittern can no longer be reckoned among our indigenous birds. The latest nest of which I have received information is one that was taken about ten years ago at the Reservoirs near Tring. Mr. H. Stevenson has not heard of any nest in Norfolk during the last twelve years.

Obs.—Mr. Hewitson mentions that in the Museum of the Natural History Society of Newcastle-upon-Tyne there is a stuffed specimen of the Little Bittern (*Ardea minuta*), together with its eggs, which formerly formed part of the Allan or Wycliffe Museum. Of the history of the eggs nothing is known; but that gentleman has "very little doubt that they were taken in this country." Macgillivray also suggests that a nest described by Montagu as that of the Water-Rail belonged to this species (Hist. B. B. iv. p. 524).

Platalea leucorodia (*Linn.*). Spoonbill.
Province [IV.].
Subprovince (10), (11).
Lat. 52°–53°. "Germanic" type. Not in Ireland.

The little that is known of the Spoonbill having formerly bred in England is contained in the record of Sir Thomas Browne, who says:—"The platea or shovelard which build upon the tops of high trees. They have formerly built in the Hernery, at Claxton and Reedham [Norfolk]; now at Trimley in Suffolk" (*Works,* Wilkin's Ed. vol. iv. pp. 315, 316). This was written about two hundred years ago, the author having died in 1682.

Numenius arquatus (*Lath.*). Curlew.
Provinces I. II.?, V.–VIII. IX.?, X.–XVIII.
Subprovinces 1, 2, 4?, 15–18, 20, 21?, 22–35, 37–38.
Lat. 50°–61°. "Scottish" type, or Northern.

Rare in the south during summer, though a few pairs are recorded as breeding in Cornwall and Devonshire.

Mr. H. Graves informs me that the Curlew "breeds regularly near Charminster in Dorset, laying its eggs in the furrows of the fallow-land;" but I suspect that in this locality, and also in Wiltshire, the Stone-Curlew (*Œdicnemus crepitans*) has been mistaken for *Numenius arquatus.*

Further north there are one or two breeding-stations in Shropshire, and Mr. O. Salvin finds the nest in Derbyshire.

The Curlew breeds in North and South Wales, and from Yorkshire northwards becomes more numerous, extending as far north as the Shetland Islands; but we learn from Macgillivray that it does not breed in the Outer Hebrides.

Numenius phæopus (*Lath.*). Whimbrel.
Provinces X.? XVII. XVIII.
Subprovinces 23?, 35, 37, 38.
Lat. 54° or 58°–61°. "Scottish" type. Not in Ireland.

Mr. Thomas Gough, of Kendal, tells me that the nest of the Whimbrel has been recently found on the mountains of Yorkshire adjoining Westmoreland, and that he has perfect confidence in his informant.

Mr. W. Dunbar describes the Whimbrel as plentiful during the breeding-season all along the coast of Sutherland and Caithness, and he tells me that it breeds in open moors near the sea. Mr. H. Osborne also marks the Whimbrel as breeding in Caithness. It breeds in Orkney and Shetland, but not in the Outer Hebrides.

TOTANUS CALIDRIS (*Bechst.*). Common Redshank.

Provinces III. IV. VIII. X.–XVIII.
Subprovinces 7, 8, 10, 11, (12), 19, 20, 22–26, 28–38.
Lat. 50°–61°. "Scottish" type, or Northern.

A few pairs still breed in Kent and Essex, but the bird is rapidly decreasing in the south, and has almost deserted the fens of the eastern counties, being driven out as its haunts become more and more circumscribed by drainage and cultivation. I have no authority for its breeding in Wales or Lancashire, though the bird can hardly be supposed wanting in Subprovinces 17, 18, and 21.

Obs.—The Green Sandpiper (*Totanus ochropus*) has been recorded by Mr. R. Lubbock (Fauna of Norfolk, p. 75) as having bred in Norfolk, but there was probably some mistake in the observation (*cf.* Proc. Zool. Soc. 1863, p. 529).

TOTANUS GLAREOLA (*Linn.*). Wood-Sandpiper.

Provinces IV. XI. XV. ?
Subprovinces 11, 24, 31 ?
Lat. 52°–56° or 58°. "Scottish"? type. Not in Ireland.

A nest was found by Mr. John Hancock at Prestwich Carr, near Newcastle, June 3, 1853. And my friend Mr. F. Bond tells me that he has some eggs taken in Elginshire, which he considers belong to the Wood-Sandpiper. Messrs. Gurney and Fisher state (Zool. 1323), on Mr. Scales's authority, that a young bird, of which a figure is given, not yet having entirely lost its down, "was shot at Beachamwell, in Norfolk, and may fairly be supposed to have been hatched near the spot where it was killed."

TRINGOIDES HYPOLEUCA (*G. R. Gray*). Common Sandpiper.
Provinces I. II.? V.–XVIII.
Subprovinces 1, 2, 3, 4?, 6, 13–18, 20–37, 38.
Lat. 50°–61°. "Scottish" type, or Northern.

Scarce in the south during the breeding-season, and apparently wanting in several of the southern and eastern counties. The Common Sandpiper is reported to breed only occasionally in Cornwall, but regularly in North and South Devon and Somerset. In Dorset it becomes more rare, though Mr. Groves has seen it on several small streams. Mr. Knox describes it as breeding regularly in Sussex, where, however, it must be scarce, as Mr. Borrer has only once found the nest. It seems doubtful whether the bird breeds in Kent, and it appears to be wanting in several of the eastern and southern districts.

TOTANUS GLOTTIS (*Bechst.*). Greenshank.
Provinces XV. XVI. XVII. XVIII.
Subprovinces 29, 32, 34, 35, 36.
Lat. 56°–59°. "Scottish" type. Not in Ireland.

Breeds in small numbers in the counties of Perth and Argyle (*Mr. R. Gray*), Ross (*Mr. W. Dunbar*), Sutherland (*Mr. Selby*), Caithness (*Mr. W. Dunbar*). Macgillivray was the first to discover the nest in the Outer Hebrides, where it has since been found by other observers.

RECURVIROSTRA AVOCETTA (*Linn.*). Avocet.
Provinces [II.] [III.] [IV.] [VIII.].
Subprovinces (6), (7), (11), (19).
Lat. 50°–54°. "Germanic" type. Not in Ireland.

In former times the Avocet appears to have been a regular summer visitor to a few localities on our southern and eastern coasts. The neighbourhoods of Rye in Sussex, Romney Marsh in Kent, Salthouse in Norfolk, and West Fen in Lincolnshire are upon record as former breeding-places.

The late Mr. H. Reid, of Doncaster, has told me that about twenty years ago he obtained the eggs from the mouth of the Humber, which appears to be the last instance of the bird having been found breeding in this country.

LIMOSA ÆGOCEPHALA (*G. R. Gray*). Black-tailed Godwit.
Provinces IV. [VIII.] [X.].
Subprovinces 11, (12), (19), (23).
Lat. 52°–54°. "Germanic" type. Not in Ireland.

Until lately, a few pairs were accustomed to breed annually in the fens of Norfolk, Cambridge, Huntingdon, and Lincoln; but it is believed that the birds have now nearly deserted their former haunts, Norfolk being the only county in which there is a possibility that a pair or two may linger occasionally.

The late Mr. H. Reid, of Doncaster, has frequently told me that the Black-tailed Godwit used, within his recollection, to breed on Hatfield Moor, in which locality he once found the young birds himself.

PHILOMACHUS PUGNAX (*G. R. Gray*). Ruff.
Provinces [I.?] IV. VIII. [X.] XI.
Subprovinces (3?), (10), 11, (12), 19, (22?), (23), 24.
Lat. 51° or 52°–56°. "Germanic" type. Not in Ireland.

Like the former, this bird is rapidly disappearing before the advance of cultivation and drainage.

Montagu was informed that Ruffs were not uncommon in the fens about Bridgewater, in Somersetshire, before they were drained. In Suffolk the bird appears to have become quite extinct; but Mr. Stevenson says that a few pairs still breed in eastern Norfolk, where, happily, they are strictly preserved. It is extinct in Huntingdon, Cambridge, and Northampton, and probably also in Lincolnshire. In Yorkshire the Ruff appears to have ceased to breed, though Mr. Reid remembered them to have been quite plentiful. Mr. Hancock and the Rev. H. B. Tristram tell me that the bird has become extinct in Durham, but still breeds occasionally in Northumberland.

SCOLOPAX RUSTICOLA (*Linn.*). Woodcock.
Provinces I.–V. VIII.–XVII.
Subprovinces 2–15, 19–26, 27, 28, 29–35.
Lat. 50°–59°. "Scottish" type, or Northern.

The nest of the Woodcock is by no means so rare as is generally supposed. The bird is reported as breeding occasionally in nearly every county throughout England and the south of Scotland. Further north it becomes more numerous, and may be considered to breed regularly from Perthshire northwards to Caithness. There is no doubt that many more birds remain to breed now than formerly; and this increase appears to be owing to the great extent of country which has been covered with plantations during the past few years.

GALLINAGO MEDIA (*Leach*). Common Snipe.

Provinces I.–V. VIII.–XVIII.
Subprovinces 1, 2–5, 6, 7, 8, 9, 10–13, 14, 15, 20–38.
Lat 50°–61°. "British" type, or general.

Far more numerous in the north during summer; but the Snipe is described as breeding regularly in most counties, even in the south of England, wherever there are suitable localities. As with the Woodcock, I have no authority for its breeding in Wales, though in all probability both birds will be found to do so.

Obs.—A few instances are on record in which the Jack Snipe (*Gallinago gallinula*) has been seen in England during the summer months; hitherto there appears to be no good authority for believing that the nest has ever been found in this island.

TRINGA ALPINA (*Linn.*). Dunlin.

Provinces VI. ? IX. ? X.–XVIII.
Subprovinces 17 ?, 21 ?, 22–38.
Lat. 52° or 53°–61°. "Scottish" type, or Northern.

The Dunlin has been reported to breed in Devonshire on the authority of Dr. Moore, but I have not been able to obtain any corroboration of this statement. The bird is also considered to nest in Pembrokeshire (*Mr. Tracy*) and in Cheshire (*Mr. Brockholes*), but some confirmation of these localities seems desirable.

There is good authority for its breeding in both divisions of Yorkshire, and thence northwards throughout Scotland.

Obs.—The Purple Sandpiper (*Tringa maritima*) has been supposed to breed within the limits of the British Islands, but the nest has never been found; and the habits of the *Grallæ* are such that the mere occurrence of a species at any particular spot during some one of the summer months is quite insufficient as proof of its breeding there. The Purple Sandpiper breeds plentifully on the highest mountain-tops in the Færoes; so that it is not improbable that it should some day be found nesting in Shetland.

PHALAROPUS HYPERBOREUS (*Lath.*). Red-necked Phalarope.

Provinces XV. XVI. ? XVII. XVIII.
Subprovinces 29, 32 ?, 35, 36, (37).
Lat. 56°–60°. "Scottish" type. Not in Ireland.

The Red-necked Phalarope breeds in a few scattered localities in the counties of Perth (*Colonel Drummond-Hay*), Inverness (*Dr. D. Dewar*), Sutherland (*Mr. St. John* and *Mr. Dunbar*), and in the Outer Hebrides (*Captain J. W. P. Orde* and *Dr. D. Dewar*).

Mr. Dunn tells me that the bird is no longer found in Orkney, where it used formerly to breed in several of the islands.

ORTYGOMETRA CREX (*Leach*). Corn-Crake.

Provinces I.–XVIII.
Subprovinces 1–38.
Lat. 50°–61°. "British" type, or general.

Throughout Great Britain, extending to the western and northern isles of Scotland. Perhaps less numerous in the south of England, but it is recorded as breeding regularly in every county from which I have received any list.

ORTYGOMETRA PORZANA (*Steph.*). Spotted Crake.

Provinces I. III.–V. X.–XII. ? XIV. ? XV.
Subprovinces 2, 3, 7, 10–13, 15, 19, 20, 22–24, 25?, 28 ?, 29–31.
Lat. 50°–58°. "English" (or "British") type.

A scarce bird, and one whose nest usually escapes observation. It seems to breed in small numbers in a few scattered localities from the north to the south of England.

In Scotland the nest has been found only in Perth, Aberdeen, and at Loch Spynie in Elgin.

ORTYGOMETRA BAILLONI (*Steph.*). Baillon's Crake.
Province IV.
Subprovince 12.
Lat. 52°–53°. "Germanic" type. Not in Ireland.

In the 'Zoologist' for 1859 (p. 6329) will be found Mr. Sealy's account of two nests taken in Cambridgeshire, the only instances in which the bird has been found to breed in this country.

RALLUS AQUATICUS (*Linn.*). Water-Rail.
Provinces I–XVIII.
Subprovinces 2–35, 37.
Lat. 50°–60°. "British" type, or general.

Throughout the mainland; and Messrs. Baikie and Heddle describe it as "found in Orkney all the year."

GALLINULA CHLOROPUS (*Lath.*). Water-hen.
Provinces I.–XVIII.
Subprovinces 1–35, 36, 37.
Lat. 50°–60°. "British" type, or general.

To the extreme north of Scotland, extending also to the Outer Hebrides and Orkney, but does not breed in Shetland.

FULICA ATRA (*Linn.*). Common Coot.
Provinces I.–XVIII.
Subprovinces 1–37.
Lat. 50°–60°. "British" type, or general.

Like the former, extends to the Hebrides and Orkney, but does not reach Shetland.

ANSER FERUS (*Steph.*). Grey-lag Goose.
Provinces [IV.] [VIII.] [X.] [XII.] XVII. XVIII.
Subprovinces (11), (12), (19), (22 ?), (23), (25), 34–36.
Lat. 57°–59°. "Scottish" type. Formerly in Ireland.

The Grey-lag Goose has long ceased to breed in the fens of Norfolk, Cambridge, Lincoln, and Yorkshire, where the bird is said to have been formerly abundant; and Mr. Gough tells me that it is also extinct in Westmoreland. It still breeds in the counties of Ross (*Mr. W. Dunbar*), Sutherland, and Caithness, and in the Outer Hebrides.

Obs.—Both the Bean-Goose (*A. segetum,* Meyer) and the Pink-footed Goose (*A. brachyrhynchus,* Baill.) have been recorded as breeding in Scotland; but Sir W. Jardine informs me that in Sutherland the Grey-lag Goose has been mistaken for the Bean-Goose, and the more recent observations of the late Mr. J. Wolley have conclusively proved that only one species at present breeds in the north of Scotland.

Similarly, in the Outer Hebrides, only the Grey-lag Goose has been lately found in the localities where Mr. J. Macgillivray believed that he had discovered the breeding-station of the Pink-footed Goose.

The late Mr. Arthur Strickland has described two species of Goose as having formerly inhabited the "carrs" of Yorkshire (Ann. & Mag. N. H. 3 ser. iii. pp. 121–124). One of them, which he terms *Anser paludosus,* is apparently identical with the Bean-Goose of other authors; but there is no positive evidence of the bird having bred in this country, it being a species proper to much higher northern latitudes.

CYGNUS FERUS (*Leach*). Whooper, or Whistling Swan.
Province [XVIII.].
Subprovince (37).
Lat. 58°–60°. "Scottish" type, formerly.

In his 'Fauna Orcadensis' (p. 133), Mr. Low remarks of the Wild Swan, that "A few pairs build in the holms of the Loch of Stenness. * * * But the few that build here never increase, are always robbed by the country-people." This observation was probably made about eighty years ago, the author having died in 1795. Messrs. Baikie and Heddle add, in 1848, that "the birds have not been known to build there for many years."

Mr. J. H. Dunn tells me that old men well remember their fathers speaking of having taken several Wild Swans' nests on the small islands in the large loch of Harray, about one hundred years ago.

In Ireland the Wild Swan appears to have been formerly more numerous, and to have extended further south than in Great Britain.

TADORNA VULPANSER (*Linn.*). Shell-drake.

Provinces I.–IV. VI.–XVIII.
Subprovinces 2, 3, (4), (7), (10), 11, 17–19, 21, 22, 24–26, 28, 30–38.
Lat. 50° or 51°–61°. "British" (or "Scottish") type.

Scarce in the south of England, and reported as extinct in Dorset, Kent, and Suffolk; but still breeds in North Devon, Somerset, and Norfolk, in the last of which counties it is described as decreasing.

SPATULA CLYPEATA (*Boie*). Shoveller.

Provinces II.–V. X. XI. XIV.–XVI.
Subprovinces 4, (7), 11, 15, 22, 24, 28, 31, 32.
Lat. 50°–58°. "British" (or "English") type. Not in Ireland.

In the 'Zoologist' (p. 5757) Mr. W. Thompson mentions a nest found in Dorset. Yarrell tells us that the Shoveller formerly bred in Romney Marsh. It still breeds occasionally in Norfolk, and Mr. F. Bond has found the nest in Staffordshire. Mr. Hewitson mentions Hornsea Mere as a breeding-locality. The Rev. H. B. Tristram tells me that the Shoveller breeds occasionally in Durham; and Mr. Hancock marks it as breeding regularly in Northumberland.

In Scotland the nest has been found once on Guillon Links, Haddingtonshire (*Sir W. Jardine*); on the banks of Loch Spynie, in Elgin (*Mr. St. John*); and in the 'Zoologist' (p. 3503) Sir G. H. Leith records that he has shot the female and found the nest in Dumbartonshire.

CHAULELASMUS STREPERUS (*G. R. Gray*). Gadwall.

Province IV.
Subprovince 11.
Lat. 52°–53°. "Germanic" type. Not in Ireland.

The nest has been found only in Norfolk, where Mr. A. Newton tells me that this duck breeds regularly, at Narford; but it is possible that the stock was originally the produce of semidomesticated birds.

Dafila acuta (*Eyton*). Pintail.

Province XI.
Subprovince 24.
Lat 55°–56°. "Scottish" type. Not in Ireland.

The nest has been found by Mr. John Hancock, who informs me that he has known the Pintail to breed spontaneously in a swamp in Northumberland, which swamp is now drained; but Mr. Hancock believes that the bird still breeds occasionally on the Northumbrian moors.

Anas boschas (*Linn.*). Wild Duck.

Provinces I.–XVIII.
Subprovinces 1–38.
Lat. 50°–61°. "British" type, or general.

Though scarce in the south during summer, a few pairs remain to breed in nearly every county of England.

Pterocyanea circia (*Bonap.*). Garganey.

Province IV.
Subprovinces 11, (12).
Lat. 52°–53°. "Germanic" type. Not in Ireland.

The nest has several times been found in Norfolk, where Mr. Stevenson tells me that a few pairs breed annually in the district of the broads on the eastern side of the county.

Mr. F. Bond has informed me that the Garganey bred also in the fens of Cambridge and Huntingdon before they were drained.

Querquedula crecca (*Steph.*). Teal.

Provinces I.–XVIII.
Subprovinces 3–12, 15, 18–23, 24–38.
Lat. 50°–61°. "Scottish" (or "British") type.

The nest of the Teal has been found occasionally in most counties, even of the south of England; and in several of these, especially in Norfolk, the bird is reported as breeding regularly. It is, however, more numerous in the north, and is described as breeding annually in nearly all the districts of Scotland.

MARECA PENELOPE (*Selby*). Wigeon.
Provinces II. IV.? VIII.? IX. XVI.? XVII. XVIII.
Subprovinces 6, 11?, 20?, 21, 32?, 34, 35, 37, 38.
Lat. 50° or 57°–61°. "Scottish" type. Perhaps in Ireland.

The nest has been found in two or three localities in England, but it is only in the north of Scotland that the Wigeon breeds regularly.

Mr. Borrer, of Cowfold, tells me that the Wigeon breeds occasionally on the borders of St. Leonard's Forest, in Sussex. The nest was found by Mr. C. S. A. Dickens in 1854, and a brood was seen again in 1862.

In their 'Catalogue of the Birds of Norfolk,' Messrs. Gurney and Fisher state their belief that the Wigeon "has been occasionally known to breed" in that county.

Mr. J. J. Briggs believes that it breeds occasionally in Derbyshire, having seen young birds, apparently belonging to this species, frequenting the marshy banks of the Trent in August and September.

Mr. J. F. Brockholes informs me that in the summer of 1863 a pair of Wigeons reared their brood at Puddington, in Cheshire, where he often watched them within a distance of a few yards. Mr. Brockholes had previously killed a Wigeon at the same spot, in August 1862.

Dr. Dewar once found a pair of Wigeons (and shot the male bird), in the last week of June, in West Inverness; so that it seems probable that the bird breeds in this county. Mr. R. Danford describes the Wigeon as breeding regularly in Ross-shire, and the nest has been found in the counties of Sutherland and Caithness. Colonel Drummond-Hay has found the nest in Orkney; and Dr. Saxby tells me that the bird breeds occasionally in Shetland, but only in backward seasons.

SOMATERIA MOLLISSIMA (*Boie*). Eider Duck.
Provinces XI. XIV. XVI. XVII.
Subprovinces 24, 28, 33, 35–38.
Lat. 55°–59°. "Scottish" type. Not in Ireland.

The Farn Islands and the Bass Rock have long been known as localities.

Mr. H. D. Graham finds the Eider breeding on Colonsay and other islands in Subprovince 33; but I do not know of any locality on the mainland of Argyleshire.

Mr. St.-John, in his 'Tour in Sutherland,' mentions some islands at the entrance of the Kyle of Tongue; and many different observers have met with the nest in the Outer Hebrides, Orkney, and Shetland.

Obs.—Bullock informed Montagu that he had found a nest of *Somateria spectabilis* at Papa Westra, one of the Orkneys, where, according to Messrs. Baikie and Heddle, the King-Duck is now only known as an occasional visitant.

Œdemia nigra (*Flem.*). Black Scoter.
Province XVII.
Subprovince 35.
Lat. 58°–59°. "Scottish" type. Not in Ireland.

Mr. W. Dunbar tells me that the Black Scoter breeds every year in many parts of the moors in Caithness, making its nest in the boggy swamps around the lakes. He has known the eggs taken more than once.

Mr. R. J. Shearer writes that a "Black Duck" is well known as breeding on one or two lakes in the Thurso district.

Nyroca ferina (*Flem.*). Pochard.
Provinces III. IV. X.
Subprovinces 8, 9, 11, 22, 23.
Lat. 51°–54°. "English" type. Not in Ireland.

The nest of the Pochard has been several times found in a limited locality on the borders of the counties of Herts and Buckingham, as I learn from my friend the Rev. H. H. Crewe.

With regard to Norfolk, the bird, according to Messrs. Gurney and Fisher (Zoologist, p. 1378), "has been occasionally known to breed in the county"—a statement confirmed by Mr. Lubbock (p. 112), on Girdlestone's authority. Mr. A. Newton tells me it has ceased to breed at Scoulton Mere for some years, but that he has reason to suppose there was a nest, in 1850, not very far from that locality.

Hewitson mentions Hornsea Mere and a piece of water a few miles from Scarborough as breeding-localities; and quite recently the Rev. H. Roundell has found the Pochard breeding in the Craven district of Yorkshire.

Obs.—A female Scaup (*Fuligula marila*) was once shot by Sir W. Jardine in Sutherland during summer, and hence it has been supposed that this species bred in the north of Scotland. But that gentlemen tells me that he considers it was "most probably a wounded bird, or remaining by some accident"*. Mr. Wolley could not find this species during his excursions in Sutherland.

FULIGULA CRISTATA (*Steph.*). Tufted Duck.

Provinces II. V. VIII. X. XI.
Subprovinces 6, 15, 20, 23, 24.
Lat. 50°–56°. "English" type. Not in Ireland.

Mr. Borrer tells me that a brood of Tufted Ducks was found near Horsham in May 1853, and another at West Grinstead in 1854.

Mr. W. H. Slaney writes that the bird is common on the large meres of Stafford and Shropshire, and that he has known of one nest in the latter county.

Sir William Milner and Mr. A. Newton have recorded the occurrence of several nests in Nottinghamshire (Zoologist, p. 4440; Trans. Tyneside Nat. Club, vol. v. p. 40).

In the 'Zoologist' (p. 2879), mention is made of a brood observed on Malham Water, in the West Riding of Yorkshire; and Mr. Hancock describes the bird as breeding occasionally in Northumberland (Trans. Tyneside Nat. Club, *ut suprà*).

Obs.—In 1848 two eggs were given to the late Mr. John Wolley in Shetland as those of the "Calloo Duck" (the local name for *Harelda glacialis*), with a positive assurance that they had been taken on a low holm in that group of islands. So far as can be determined from their appearance, there is nothing to cast a doubt on the accuracy of the information; and as it came from respectable and disinterested persons, that gentleman believed it. I am, however, not aware of any corroboration of the statement, and the breeding of the Long-tailed Duck in Shetland is probably a rare occurrence.

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* In Mr. Selby's paper on the Birds of Sutherland (Edinb. New. Phil. Journ. vol. xx. p. 293), it is stated that this bird "was attended by a young one, which unfortunately escaped among the reeds;" but in the note with which I have been favoured by Sir William Jardine, he says nothing about the latter, merely mentioning that the old female he shot is now in his collection.

Clangula glaucion. Mr. W. Dunbar informs me that the Golden-eye has been once known to breed in Sutherland, a nest with the young birds having been found by a shepherd in the hollow of an old larch-tree on Loch Assynt; and Mr. Dunbar suggests that one of the parents must have been disabled and unable to migrate.

Mergus serrator (*Linn.*). Red-breasted Merganser.

Provinces XVI. XVII. XVIII.
Subprovinces 32–38.
Lat. 55°–61°. "Scottish" type, or Northern.

In several localities on the west coast of Scotland, extending from Islay to Shetland; but I have no authority for its breeding on the east side of Scotland, though Macgillivray tells us that it is found in summer as far south as the Moray Firth.

Mergus castor (*Linn.*). Goosander.

Province XVIII.
Subprovince 36.
Lat. 57°–58° or 59°. "Scottish" type. Not in Ireland.

Mr. John Macgillivray appears to have been the first to discover the nest of the Goosander in the Outer Hebrides, where he describes it as breeding by the larger lakes, and occasionally by the sea.

Mr. Robert Gray tells me that he has no doubt about the Goosander; for his friend Dr. Dewar has killed the female on the nest, and taken the contents of several nests, in North Uist. Mr. Gray has also himself obtained eggs from the same locality.

The "Goosander," mentioned by Low as breeding in the Loch of Stenness, is no doubt the Red-breasted Merganser, one species only of *Mergus* being included in the 'Fauna Orcadensis.'

Podiceps cristatus (*Lath.*). Great Crested Grebe.
Provinces II.–V. VI.? VII.? VIII.–X.
Subprovinces, 6, 8, 10, 11, (12), 14, 15, 16?, 17?, 18?, 19, 21, 22, 23.
Lat. 50°–55°. "English" type. Not in Scotland.

A few pairs breed in the counties of Sussex, Herts, Suffolk, Norfolk, Huntingdon (perhaps extinct, *Mr. F. Bond*), Worcester, Warwick, Shropshire, Lincoln, Cheshire, and in both divisions of Yorkshire. Yarrell tells us that the Great Crested Grebe breeds on some of the lakes of Wales, but I do not know in which of the districts.

Podiceps minor (*Lath.*). Little Grebe.
Provinces I.–XVIII.
Subprovinces 1–37.
Lat. 50°–60°. "British" type, or general.

Throughout Great Britain, and extends to the Outer Hebrides and Orkney, but does not appear to have been found breeding in Shetland.

Obs.—The Eared Grebe (*Podiceps auritus*) is mentioned by Pennant as breeding at Spalding in Lincolnshire; but the nest does not seem to have come under the notice of any recent observer.

Colymbus arcticus (*Linn.*). Black-throated Diver.
Provinces XV.–XVIII.
Subprovinces 29, 31?, 32, 34–36, (37).
Lat. 56°–59°. "Scottish" type. Not in Ireland.

Mr. Robert Gray tells me that the Black-throated Diver breeds on the confines of Perth and Argyleshire, extending to both counties. The nest has been found in several parts of Argyleshire, Inverness, Ross, and Sutherland, and also in the Outer Hebrides; but the bird is said to have become quite extinct in Orkney.

Colymbus septentrionalis (*Linn.*). Red-throated Diver.
Provinces XV.—XVIII.
Subprovinces 31, 32, 34–38.
Lat. 56°–61°. "Scottish" type. Not in Ireland.

With much the same range as the former species, the Red throated Diver appears to be the more frequent of the two, and extends to Shetland.

Mr. St. John mentions Loch Endorb, in Morayshire, as a locality for the nest.

Obs.—*Colymbus glacialis*. Mr. W. Dunbar tells me that once, when a boy, he saw a pair of Great Northern Divers, with one young one, on Loch Endorb. On the same loch were two or three pairs of the Black-throated Diver; so that the two species were easily distinguished by the great disparity of size.

Dr. Saxby writes that he has procured from Yell, in Shetland, some eggs which he considers to belong to the Great Northern Diver; but I fear that the eggs alone are not to be relied upon, as Mr. R. Gray has seen eggs about as large as those of the Great Northern Diver, and very much resembling them in shape, which were taken from a Black-throated Diver shot on its nest. The last-named species, however, does not breed in Shetland, as Dr. Saxby has lately remarked (Zool. p. 9525).

Messrs. Baikie and Heddle inform us that in Orkney the Great Northern Diver has been seen during summer on moors at a distance from the sea; but, as yet, the fact of its breeding in any part of the British Islands seems to need positive proof.

URIA TROILE (*Lath.*). Common Guillemot.
Provinces I.–III. [IV.] VI. VII. X.–XVIII.
Subprovinces 1–7, (11), 17, 18, 22, 24–28, 30–38.
Lat. 50°–61°. "British" type, or general.

Formerly the Guillemot used to breed in the cliffs at Hunstanton in Norfolk.

The variety which has been distinguished under the name of Ringed Guillemot (*U. ringvia*) appears to occur more frequently in the northern counties. It is returned as breeding on Lundy Island, the coasts of Wales and Yorkshire, the Farn Islands, Ailsa, the Bass Rock, in Aberdeen, Banff, Caithness, and in all three groups of isles, and is probably to be met with in most other localities where the Common Guillemot is numerous.

Obs.—Brünnich's Guillemot (*U. bruennichi*) is included by Sir W. Milner in his List of the Birds of Sutherland, published in the

'Zoologist;' but Mr. Henry Milner has kindly informed me that the bird was not found breeding there, and only a single specimen was purchased on that occasion.

URIA GRYLLE (*Lath.*). Black Guillemot.

Provinces [VI.] [VII.] XII. XIV.–XVIII.
Subprovinces (17), (18), 25, 28, 29, 30–38.
Lat. 54°–61°. "Scottish" type, or Northern.

In the time of Montagu a few pairs used to breed annually at Tenby; and it is possible that the bird is not yet extinct in this locality, as Mr. Tracy includes it in his list. Pennant mentions Llandudno and Anglesea; and Mr. J. F. Crellin finds the Black Guillemot breeding in small numbers in the Isle of Man. It breeds also on the east coast of Scotland, at St. Abb's Head (*Rev. J. Duns*), on the Bass Rock; on the Isle of May (*Sir W. Jardine*); at Stonehaven (*Dr. J. A. Smith*); and is pretty generally distributed in the north and west of Scotland.

Obs.—The Little Auk (*Arctica alle*) is recorded as having been seen by Macgillivray on the Bass Rock during the month of May, and was reported to him as breeding at St. Abb's Head; and in Thompson's 'Birds of Ireland' (vol. iii. p. 220), mention is made of four Little Auks seen at Ailsa Craig on the 19th of May; but the eggs have not been found in either locality.

ALCA IMPENNIS (*Linn.*). Gare-fowl, or Great Auk.

Province [XVIII.].
Subprovinces (36), (37?).
Lat. 59°–60°. "Scottish" type, formerly. Not in Ireland.

Spoken of positively by Martin as having formerly bred on St. Kilda; and according to the information procured in the Orkneys by Bullock, and published by Montagu, a pair of this species annually visited Papa Westra up to the year 1812, when the specimen now in the British Museum, and the last observed there, was shot.

Mr. John Macgillivray, in 1840, found that the bird was well known to the inhabitants of St. Kilda, but had not been observed to breed there for many years back.

FRATERCULA ARCTICA (*Illig.*). Common Puffin.
Provinces I. II. [III.] VI. VII. X.–XVIII.
Subprovinces 1, 2, 4, 5, (7), 17, 18, 22, 24, 25, 27, 28, 30–38.
Lat. 50°–61°. "British" type, or general.

Montagu tells us that the Puffin used formerly to breed in the cliffs of Dover. It still breeds in small numbers in the Isle of Wight, and is to be found on most of our rocky shores during the nesting-season. As with many other sea-birds, I have no authority for its breeding in Subprovince 29.

ALCA TORDA (*Linn.*). Razor-bill.
Provinces I. II. [III.] VI. VII. X.–XVIII.
Subprovinces 1–6, (7), 17, 18, 22, 24, 25, 27, 28, 30–38.
Lat. 50°–61°. "British" type, or general.

This is perhaps the most abundant of our cliff-birds; but, like the Puffin and Guillemot, it does not nest upon the flat shores of the east coast from Kent to Yorkshire; and I have no authority for Subprovinces 26 and 29, though there can be little doubt that it breeds in both of these districts.

GRACULUS CARBO (*G. R. Gray*). Common Cormorant.
Provinces I. II. [IV.] VI. VII. X.–XVIII.
Subprovinces 1–6, (11), 17, 18, 22, 24–28, 30–38.
Lat. 50°–61°. "British" type, or general.

Like most other sea-fowl, the Cormorant is more numerous on our northern and western coasts.

Sir Thomas Browne tells us that they formerly built upon trees at Reedham in Norfolk, "whence King Charles the First was wont to be supplied."

Doubtless the Cormorant, as well as the Shag, breeds on the Isle of May, and perhaps on other parts of the coast of Fifeshire; but I have no list for this county.

GRACULUS LINNÆI (*G. R. Gray*). Shag.
Provinces I.–II. VI. VII. X.–XVIII.
Subprovinces 1–5, 17, 18, 22, 24–29, 32–38.
Lat. 50°–61°. "British" type, or general.

The Shag is far less numerous than the Cormorant in the south, but is described as abundant in many parts of Scotland, especially the western and northern islands. On the east side of Scotland, however, there are large tracts of coast on which none are to be seen. The bird is also wanting on the south and east coasts of England, from the Isle of Wight to Yorkshire.

SULA BASSANA (*Boie*). Gannet.

Provinces I. XIII. XIV. XVIII.
Subprovinces 2, 27, 28, 36, 37.
Lat. 51°–59°. "Scottish" type, or Northern.

The breeding-stations of the Gannet are Lundy Island, in the British Channel; Ailsa Craig, off Ayrshire; St. Kilda (and, I believe, one or two neighbouring islands), in the Outer Hebrides; Suliskerry, which lies to the west of Hoy in Orkney; and the Bass Rock, in the Firth of Forth.

STERNA CANTIACA (*Gmel.*). Sandwich Tern.

Provinces I. III. XI. XII. XIV.–XVI.
Subprovinces 1, 7, 8, 24, 25, 28, 29, 32.
Lat. 50°–57°. "English" type, or Southern.

Breeds in Cornwall (*Mr. E. H. Rodd*); in South Kent occasionally (*Mr. R. Kent*); in Essex, and probably also in North Kent, at the mouth of the Thames (*Mr. F. Bond*); in Lancashire (this may include Subprovince 21) (*Rev. H. B. Tristram*); on the Farn Islands and Isle of Coquet, off Northumberland, and on the coast of Cumberland.

Mr. Robert Gray writes that a small colony has lately established itself on an island in Loch Lomond; and Sir W. Jardine tells us that it breeds on the Isle of May and off North Berwick. Further north, the birds have been seen in summer on the Firths of Tongue and Erribol; but the nest was not discovered.

STERNA PARADISEA (*Brünn.*). Roseate Tern.

Provinces I. XI.–XIV. XV. XVI.
Subprovinces 1, 24, 25, 26 ?, (27), 28, 29, 32.
Lat. 50°–57°. "English" or "British"? type.

Only a few localities are known for the nest of this species, which appears to be much more scarce than the Common and Arctic Terns.

Mr. Rodd marks the Roseate Tern as breeding regularly in Cornwall. Mr. Hewitson mentions Foulney Island in Lancashire, and Yarrell the low islands in the Solway Firth. The Farn Islands are another well-known locality. In Scotland Sir W. Jardine has found the bird breeding plentifully in the Isle of May, off Fifeshire. Mr. Archibald Hepburn informs me that it breeds also in Haddingtonshire; and Mr. Robert Gray finds a few pairs breeding on an island in Loch Lomond, but remarks that "this elegant species has entirely disappeared from the Cumbraes, where it was originally discovered."

STERNA HIRUNDO (*Linn.*). Common Tern.
Provinces I.–IV. VI.–VIII. IX. ? X.–XVIII.
Subprovinces 1, 2, 4, 6–8, 11, 17–19, 21 ?, 24–26, 28–38.
Lat. 50°–61°. "British" type, or general.

Breeds on various parts of the coast from the south to the north of Great Britain, and frequents also the islets in many of the Scottish Lakes, but has not always been distinguished from the next species.

STERNA MACRURA (*Naum.*). Arctic Tern.
Provinces I.–IV. VII. VIII. IX. X.–XII. XIV.–XVIII.
Subprovinces 1, 3, 6–8, 11, 17–19, 24, 25, 28–30, 32–38.
Lat. 50°–61°. "British" type, or general.

With much the same range, in Great Britain, as the Common Tern, the Arctic Tern appears to be about equally numerous; and if observed in fewer districts, this is probably only because it has been passed over, being either mistaken for, or associated with, the Common Tern.

STERNA MINUTA (*Linn.*). Lesser Tern.
Provinces II.–IV. VIII. IX. ? X.–XII. XIV.–XVIII.
Subprovinces 6–8, 10, 11, 19, 21 ?, 22, 24, 25, 28, 30–32, 35, 37.
Lat. 50°–60°. "British" type, or general.

Though not numerous as a species, the Lesser Tern breeds in a few scattered localities from Sussex to Orkney. As Macgillivray remarks, most of its breeding-stations are on the east side of Great Britain; and this is also the case with the other Terns, on account of the greater prevalence on the east coast of the low sandy shores and islets which these birds prefer for their nests.

HYDROCHELIDON FISSIPES (*G. R. Gray*). Black Tern.
Provinces III. IV. [VIII.].
Subprovinces 7, (10), 11, (12), (19).
Lat. 51°–53°. "Germanic" type. Not in Ireland?

This is one of the birds whose numbers have greatly diminished of late years; for although Mr. Hewitson describes it as "abundant in some parts of the counties of Cambridge and Lincoln," I believe that it has nearly, if not entirely, ceased to breed in this country.

A pair or two are considered still to nest occasionally in Kent and Norfolk; but I am assured by various correspondents that the Black Tern has become altogether extinct in the counties of Suffolk, Cambridge, Huntingdon, and Lincoln.

LARUS RIDIBUNDUS (*Linn.*). Black-headed Gull.
Provinces III. IV. V.? VIII.–XVIII.
Subprovinces 7, 8, (10), 11, 15?, 19, 21, 22, 24–38.
Lat. 50°–61°. "Scottish" (or "British") type.

A few breeding-stations occur in the south of England, in the counties of Kent, Essex, Norfolk, and Lincolnshire; but the localities for the bird are much more numerous in the north.

Plott mentions a locality in Staffordshire, but I do not know whether the birds still frequent this county during the breeding-season.

RISSA TRIDACTYLA (*Macgill.*). Kittiwake.
Provinces I. II.? X.–XVIII.
Subprovinces 1-3, 4?, 22, 24, 25, 27–38.
Lat. 50°–61°. "Scottish" type, or Northern.

On the south coast, the Kittiwake has been stated to breed in Dorsetshire; but I have been unable to obtain any confirmation of this assertion. It is certainly not found in the Isle of Wight during the nesting-season.

Mr. Rodd tells me that the Kittiwake breeds occasionally in Cornwall; the Rev. M. A. Mathews finds the nest in North Devonshire; and Mr. Crotch tells me that the bird breeds also in Somerset. From this point I am unable to trace any locality until we reach the Isle of Man, where Mr. Crellin says that it breeds annually.

On the east coast of England, the Kittiwake breeds at Flamborough Head and at the Farn Islands, off the coast of Northumberland. It is also abundant in many different parts of Scotland, especially in the western and northern isles.

LARUS CANUS (*Linn.*). Common Gull.
Provinces I. III. VI. X.? XII. XIII.? XIV. XVI.–XVIII.
Subprovinces 1–3, 8, 17, 22?, 25, 26?, 27, 28, 32–38.
Lat. 50°–61°. "Scottish" type, or Northern.

Breeds in Cornwall (*Mr. E. H. Rodd*), in North Devon (*Rev. M. A. Mathews*), and in Somerset (*Mr. W. D. Crotch*); in Pembrokeshire (*Mr. J. Tracy*); and in Cumberland (*Mr. T. Gough*). On the east coast of England, the Rev. J. C. Atkinson assures me that the Common Gull breeds in the Essex Marshes, where it is rare. It is believed to nest on the cliffs of Yorkshire; but it appears to be a scarce bird in most of the English localities, and seems to be wanting also in several of the Scottish districts.

LARUS FUSCUS (*Linn.*). Lesser Black-backed Gull.
Provinces I. II. VI. VII. XI.–XIV. XVI.–XVIII.
Subprovinces 1–3, 5, 6, 17, 18, 24–28, 32–38.
Lat. 50°–61 . "British" type, or general.

Like many other of our sea-fowl, the Lesser Black-backed Gull becomes much more numerous northwards, though it is too generally distributed to be placed under the Scottish type.

LARUS ARGENTATUS (*Brünn.*). Herring-Gull.
Provinces I.–III. VI. VII. X.–XVIII.
Subprovinces 1–7, 17, 18, 22, 24–38.
Lat. 50°–61°. "British" type, or general.

This appears to be the most widely distributed of all our Gulls, being found on all the rocky parts of the coast during the breeding-season.

Larus marinus (*Linn.*). Great Black-backed Gull.
Provinces I. VI. VII.? XII.–XIV. XVI. XVIII.
Subprovinces 1, 2, 17, 18?, 25–28, 32–38.
Lat. 50°–61°. "Scottish" type, or Northern.

It is only in the north of Scotland that the Great Black-backed Gull is at all numerous. The few localities in which it has been found breeding in England are scattered along the west coast, from Cornwall to Cumberland. I cannot find any recent authority, except Yarrell, for its breeding in the marshes at the mouth of the Thames.

Stercorarius catarrhactes (*G. R. Gray*). Great Skua.
Province XVIII.
Subprovince 38.
Lat. 60°–62°. "Scottish" type, or Northern. Not in Ireland.

Only in the Shetland Isles, where the nest has long been known; and here the bird extends to the island of Unst, which lies a little beyond latitude 61°.

Stercorarius parasiticus (*G. R. Gray*). Arctic Skua.
Provinces [XVI.] XVII. XVIII.
Subprovinces (33), 35–38.
Lat. 57°–61°. "Scottish" type, or Northern.

Pennant formerly found the Arctic Skua breeding in the Islands of Islay, Jura, and Rum; and it is probable that a few pairs may still linger in some of the numerous islands of this district, though Mr. H. D. Graham tells me that the bird is quite extinct in Jura. In Thompson's 'Birds of Ireland' (vol. iii. p. 390) mention is made of a pair which were shot in 1837 in the Isle of Rum, where it is likely they had a nest.

The bird still breeds in Sutherland and Caithness, and in all three groups of the Scottish Isles.

Stercorarius cepphus (*G. R. Gray*). Long-tailed Skua.
Provinces XVII. XVIII.
Subprovinces 35, 36, 37.
Lat. 57°–61°. "Scottish" type. Not in Ireland.

Respecting a former breeding-station in Caithness, Mr. R. J. Shearer, of Ulbster Housewick, has favoured me with the following particulars :—"Seven or eight years ago a few pairs of the Long-tailed Skua were always to be found breeding on the same ground with the commoner species. This was on a large inland flat, studded with small dark lochs. Besides the two Skuas, the Lesser Black-backed Gull, the Common Gull, and the Curlew used to breed on the same spot. In 1860, a pair of Long-tailed Skuas were shot on this ground during the breeding-season; and when Dr. Sinclair, in 1840, published a list of the Birds of Caithness, he had found only the Long-tailed Skua, which at that time seemed to be the most numerous and easily obtained on this breeding-ground."

On revisiting this spot in 1861, Mr. Shearer found that nearly all the Skuas had been destroyed by a gamekeeper, who made a point of shooting every bird that attempted to breed on the moor. It may be added that Mr. Shearer is perfectly aware of the difference between the Long-tailed and Arctic Skuas, and that he has always been accustomed to distinguish the two species.

Mr. Robert Gray, of Glasgow, who has paid much attention to the birds of the West of Scotland, tells me that he has seen a pair of the Long-tailed Skua, male and female, which were obtained, in June 1862, on the Island of Wiay, off Benbecula, one of the Outer Hebrides. These birds were shot above a marsh where the Arctic Skua was breeding; so that there can be little doubt that they had a nest.

Mr. J. H. Dunn tells me that three pairs of the Long-tailed Skua bred in Hoy Island in 1852, when he obtained their eggs. None have nested since.

PROCELLARIA GLACIALIS (*Linn.*). Fulmar.
Province XVIII.
Subprovince 36.
Lat. 57°–58°. "Scottish" type. Not in Ireland.

Only in the Outer Hebrides, where St. Kilda has long been noted as the principal breeding-place. Yarrell adds the neighbouring islands of Borrera and Soa, on the authority of Mr. G. C. Atkinson, "who was informed that the birds also breed in the South Isles of Barra."

Puffinus anglorum (*Boie*). Manx Shearwater.
Provinces I. [XII.] XVI. XVIII.
Subprovinces 1, 2, (25), 33, 36–38.
Lat. 49°–61°. "Atlantic" type, or Western.

The Manx Shearwater breeds in the Scilly Islands. In Lundy Island, in the Bristol Channel (*Rev. M. A. Mathews*). Formerly it was abundant on the Calf of Man, where Mr. Crellin considers that it was extirpated by rats. Mr. H. D. Graham finds it breeding on the Islands of Staffa and Treshnish; and there are several localities in the Outer Hebrides, Orkney, and Shetland.

It will be observed that all these localities are situated on the west coast, and the nest seems always to be placed upon islands. I am not aware of any breeding-station on the mainland, unless Berwickshire should prove to be an exception, as the Rev. J. Duns tells me that he has seen it during summer off St. Abb's Head, and believes that a few pairs breed there occasionally.

Thalassidroma leachi (*Keys. & Bl.*). Fork-tailed Petrel.
Province XVIII.
Subprovinces 36, (37) ?
Lat. 57°–58° or 59°. "Atlantic" type. Not in Ireland.

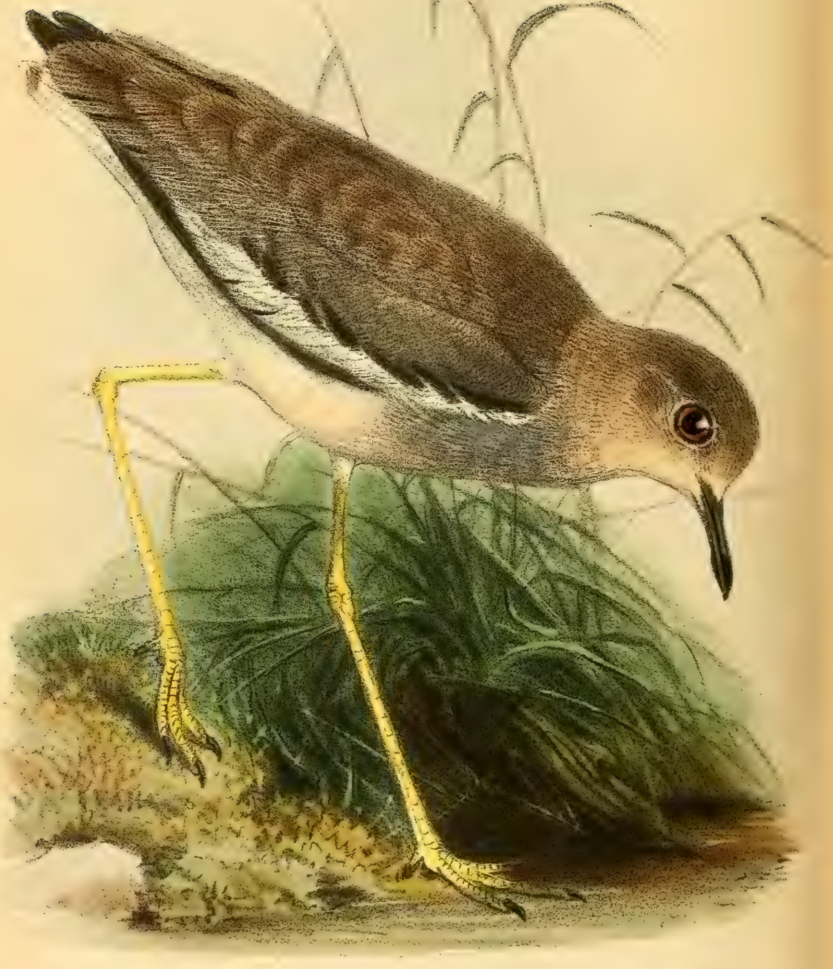
The only breeding-station known with certainty is St. Kilda, in the Outer Hebrides.

Mr. J. H. Dunn marks the Fork-tailed Petrel as having formerly nested in Orkney; but the bird is not mentioned in the 'Fauna Orcadensis,' nor in the more recent work of Messrs. Baikie and Heddle. Mr. Dunbar includes it in his 'List of the Birds of Ross-shire,' but without mention of the locality.

Thalassidroma pelagica (*Vigors*). Stormy Petrel.
Provinces I. XIII. XVI. XVIII.
Subprovinces 1, 2, 27, 33, 36–38.
Lat. 49°–61°. "Atlantic" type, or Western.

In the Scilly Isles. In Lundy Island (*Rev. M. A. Mathews*). On Ailsa (*Mr. R. Gray*). On Iona, Staffa, and Treshnish (*Mr. R. D. Graham*). In Skye (*Mr. J. Macgillivray*, fide *Yarrell*); and in all three groups of the Western and Northern Isles.

Sir W. Jardine has seen small parties of Stormy Petrels, in June, off the Isle of Man, where they probably breed.



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J. Wolf. del. et lith.

M & N Hanhart imp

CHÆTUSIA LEUCURA.

XXXVI.—*Second Appendix to a List of Birds observed in the Islands of Malta and Gozo**. By Charles A. Wright, C.M.Z.S.

(Plate X.)

The expression used by Gätke, with reference to the European Ornis, that "its materials are endless," would seem to be very applicable to Malta, as shown by the additions which, from time to time, occur, to enrich the ornithology of this and its sister island. An illustration of this kind is afforded in the fact that, since the publication of my "List" in 'The Ibis' for January and April, 1864, I have already had to make some additions, and I am now again called upon to add two other interesting species to those recorded, as well as to note the reappearance of a third remarkable bird, an inhabitant of the distant continent of Asia.

256. Chætusia leucura (Lichtenstein), *Vanellus villotæi*, Audouin. (White-tailed Plover.) (Plate X.)

On the 18th October, 1864, in one of my frequent visits to the game-stalls in the Malta market, my attention was struck by a strange-looking bird, which was offered to me for sale as a Cream-coloured Courser—a somewhat rare visitor, but of which I had picked up, in the course of several years, from the same stall, one or two specimens, and a few others from other sources. This it certainly was not. On consulting such books as I had at hand, I could find nothing answering to it in Bree's 'Birds of Europe' or Degland's 'Ornithologie Européenne'†; and being sure it did not belong to any species hitherto observed in England, I was altogether at a loss to know what it was. The short description, in 'The Ibis,' for 1859 (pp. 52, 53), of *Vanellus leucurus*, given by Mr. E. C. Taylor, in his "Ornithological Reminiscences of Egypt," to which I subsequently referred, was sufficient to satisfy me that I was in possession of one of these birds, so rare in European collections that Mr. Taylor observes there is but one, unnamed, footless specimen in the British Museum; and in the Paris Museum, at the Jardin des Plantes, he could not find it at all. It was, he adds, perhaps, the rarest species which he and his party met with in Egypt, though on an extensive tract of marshy country, a few miles south-west of Thebes, it was abundant and several were shot. In confirmation of this, I am informed that a gentleman, who returned to Egypt this winter, met with a good many near Thebes during his visit last year.

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* See 'Ibis,' 1864, p. 291.

† The Montpellier specimen, afterwards mentioned by Mr. Wright, is referred by Degland (ii. p. 87) to *Pluvianus melanocephalus*. *Cf.* Bonap. Rev. Crit. p. 82.—Ed.

There is an indifferent figure of the bird in the magnificent French work 'Description de l'Egypte,' published by order of the first Napoleon; but this figure is accompanied by a very accurate description, under the name of 'Vanneau de Villoteau' —*Vanellus villotæi.* The female only, however, is described, the plumage of the male being, it states, altogether unknown. Unfortunately I cannot throw any light on this point, as my specimen also proved to be a female; but probably the sexes do not differ greatly, if we may hazard a conjecture from analogy. Savigny remarks that the food and mode of propagation are also unknown. "Up to the present time," he continues, "this new species has been discovered nowhere but in Egypt."

Subsequent researches, however, have proved its occurrence in Asia (see 'List of Birds in the Museum of the Asiatic Society, Calcutta,' by Edward Blyth); and a single example has been captured in Europe, which was killed from a flock of its congener, the common Lapwing, at Montpellier, as related in the 'Richesses Ornithologiques du Midi de la France' of MM. Jaubert and Barthélemy-Lapommeraie (p. 452). This specimen, hitherto unique as European, is in the collection of M. Doumet, at Cette.

The habitats named by Mr. Blyth are Middle Asia and North Africa, but he says it is very rare in India. A specimen was obtained from the Calcutta Bazaar, and described in the 'Journal of the Asiatic Society' (vol. xiii. p. 387).

Dr. Leith Adams informs me that he obtained specimens from the Salt Mountains of the Punjaub; and I have much satisfaction in inserting here some unpublished notes on this bird made by that indefatigable observer, in April, 1853:—

"'Brown Plover,' Salt Range, Punjaub. It is seen generally by the sides of pools and lakes, in small flocks. Length, from tip of bill to tip of toe, 14 inches. Eye large and prominent; iris hazel; margins of lids red. Bill black, 1¼ inch long. Nostrils linear, and placed in a groove. Forehead and chest a dirty whitish brown. Head, neck, and back brown, having a vinaceous shade, like the common Lapwing, on the back. Secondary wing-coverts edged with white and black. Primary wing-coverts more or less so. The first eight quills black; remainder white, tipped with black gradually towards the smallest, until the last four or six are pure white. Rump and tail pure white (in some specimens a slight edging of black on the tip of the tail). Throat dirty whitish brown, like the forehead. Belly and vent white, with a faint rufous tinge. Inner surface of wings white. Legs yellow; tibiæ half naked; tarsus scaled.

"P. S. 1855. *Vanellus leucurus* (Licht. and Blyth, confirmed by Sir William Jardine). A rare Indian bird—Kabul its habitat; so it may be only migratory in the Punjaub. Sex not recorded. Native name, *Chizi*. The reason it was not included in either of my Indian lists arose from the skins not having been identified until after the papers were published."

I now subjoin a description of the Maltese specimen, with dimensions, which I took when the bird was still in the flesh, as all particulars relating to an example of this little-known bird, killed in a European island, will doubtless be acceptable to those who take an interest in European ornithology and the geographical distribution of species:—

Length, from tip of bill to end of tail, 10¾ inches, or 27 centimetres. From carpus to tip, 7⅛ inches. First and second primaries nearly equal, third shorter. Tarsus nearly 3 inches, or full 7 centimetres. Middle toe 1¼ inch. Naked part of thigh 1½ inch. Toes long and slender, three before and one behind. Space between first and second slightly webbed. Tibiæ feathered to about half their length. Bill 1⅜ inch, or 3½ centimetres, long. Upper surface of head, neck, back, scapulars and tertials ashy brown, with a slight metallic and vinous colouring. Primaries black, with a portion of the upper parts of the shafts white, spotted with brown. Secondaries pure white, with some of their ends spotted or streaked with brown. Wing-coverts slightly marked with black, so as to form two almost uninterrupted bars. Tail pure white; the two middle feathers and some of the others, as well as the outer ones, slightly tipped with brown. Throat, under wing- and tail-coverts, and sides pure white. Chest and crop ashy brown, with a violet tinge on the lower parts. Abdomen white, mixed with fawn-colour. Bill black. Legs yellow. Colour of eye and eyelids not distinguishable.

I could not learn any particulars whether this wanderer was in company with others when shot. All that I could ascertain was that it was obtained two days previously (16th Oct.), near Casal Zabbar, on the east coast of the island. For some time prior to this, strong southerly and easterly winds were prevalent. It had probably found its way from Egypt to Malta by way of Benghazi or Tripoli, although, at this season, the contrary course might be expected, birds in general migrating, in the autumn and winter, from a northerly to a southerly region. But I am more inclined to think that it was accidentally blown off the coast of North Africa, and was thus forced to make an unwilling journey in unknown parts, rather than that it was returning, in a course of regular migration from a visit to Europe, to its former haunts.

I have since received a female specimen of *Chætusia leucura* from Mr. Stafford Allen, at Alexandria, who writes to me as follows:—"Although I have generally looked upon this as a very rare bird, having only once *seen* it alive (and was then unable to shoot it), it seems to be not very uncommon somewhere near Alexandria, since I have seen, I should think, not less than twenty specimens here during the last two months (Nov. and Dec.), sometimes as many as three or four in one morning. I have preserved four or five; but as they mostly have their throats cut, according to the Mahommedan custom, it is troublesome work."

In a postscript of January 3rd, he adds:—"This morning I saw four *Chætusia leucura* in the market; but none were very good specimens. Perhaps they are unusually abundant this year, which may account for your visitor."

257. Charadrius longipes, Temminck. (Asiatic Golden Plover.)

Charadrius virginiacus, Strickl. Ann. N. Hist. 2nd ser. vol. v. p. 40 (nec *virginicus*, Borkhausen).

I have to record the capture in Malta of a second specimen of this denizen of Asia, which, always excepting that extraordinary rendezvous for exotic and little-known species, Heligoland, is the only spot in Europe in which it has hitherto been found. This example was shot in May, 1861. It was consequently in summer plumage; and, before handling it, I mistook it for a small specimen of *Charadrius pluvialis* in bad condition. It was preserved by a Maltese bird-stuffer, merely on account of its being in a state of plumage not noticed before in this island, the common Golden Plover, its close ally, being known here only in its winter-dress. Through the kindness of Signor A. Zammit, who became possessed of it, I have been enabled to examine and compare it with *Charadrius pluvialis*. The following are the dimensions of the two birds, from measurements taken by myself:—

	Length.	Carpus to tip.	Beak.	Tarsus.
Charadrius longipes,	10 inches (about).	$6\frac{6}{8}$ inches.	1 inch (about).	$1\frac{6}{8}$ inch.
Charadrius pluvialis,	$10\frac{1}{4}$,, ,,	$7\frac{6}{8}$,,	,, ,,	$1\frac{5}{8}$,,

The legs and toes of *Charadrius longipes* are more slender, and the general appearance is smaller. The head is considerably smaller, and especially remarkable in being much narrower across the top.

258. Sterna anglica. (Gull-billed Tern.)

Three magnificent specimens in adult breeding-plumage were killed in May 1864; and I have much pleasure in adding this handsome species to the list of our feathered visitors. I may here state that, in the third week of May of the present year (1865), several beautiful specimens of *Sterna leucoptera* and *Sterna hybrida* were obtained at the head of the grand harbour. I shot one of the latter in the Quarantine Creek.

The following are some additional notes on birds already observed in Malta:—

Falco peregrinus (No. 16, Ibis, 1864, p. 47). On the 4th May, 1864, I obtained one of these birds. It was not an adult, being without the transverse markings. It seems to approach *Falco barbarus* in the ruddy colouring of the under surface.

Its dimensions, taken in the flesh, were—length of wing $11\frac{3}{4}$ inches, extending beyond the tail $1\frac{7}{8}$ inch; whole length 15 inches.

Hirundo rupestris (No. 65, Ibis, 1864, p. 57). I obtained another specimen of this Swallow on the 8th March of this year. It was shot in Gozo, where it had probably passed the winter. Dr. Adams wrote to me, on the 28th February, as follows:—"I have just returned from Gozo, and am glad to be able to put you in possession of the following memorandum with reference to *Cotyle rupestris*:—Feb. 22, Rabato, Gozo.—A pair of Rock-Swallows have been sporting about the fort and sunny side of the square all day. Feb. 23.—Weather very cold—even snow fell to-day, at the Giant's Tower; but nevertheless I saw a flock of some ten Rock-Swallows sporting about in the gorge of Schlendi and around the cliffs to the westward. I have noticed this Swallow about Rabato in summer, but have not been able to confirm its identity till yesterday. I think, perhaps, individuals remain throughout the year in Gozo."

It would be interesting to ascertain if the Rock-Swallow is really an habitual resident in the above-mentioned island.

Caprimulgus ruficollis (No. 69, Ibis, 1864, p. 58). A male specimen (the second I have met with) of this fine Nightjar was shot here on the 12th May of the present year (1865), and I have preserved the skin. It flew up against the balcony of a country-house, and thus brought about its own destruction; for the inmate, being a sportsman, immediately went out with a gun and bagged it. It was in beautiful condition, and had scarcely a feather injured by the shot. The principal habitat of this species is Algeria, but I have no doubt it frequents other parts of North Africa. It has occasionally appeared in the south of France, and it occurs in some parts of Spain. That it sometimes wanders far from its usual haunts, is shown by the startling announcement, made by Mr. Hancock, of its capture, some years ago (1856), at Killingworth, near Newcastle (Ibis, 1862, p. 39).

Alauda cristata (No. 78, Ibis, 1864, p. 60). I have referred to this species, in the first part of this list, as a rare visitor in March and October. I should have given Schembri as my authority for this statement; for all my endeavours to find it, during many years' observations, have proved unavailing. Year after year I have examined hundreds of Skylarks brought for sale to the market, in the hope of detecting a Crested Lark amongst them, but invariably with a negative result. Another writer on the natural history of Malta says it is common in spring and autumn; but he must have been mistaken. The bird-dealers, to whom I have shown preserved skins, and offered rewards should they bring me a Crested Lark captured here, all agree in declaring they have never met with it. From this I conclude that it is not a regular migrant across the Mediterranean; for, abundantly spread as it is both on the southern shores of Europe and the northern shores of Africa, we should certainly often observe it in Malta were its habits migratory.

Charadrius hiaticula? (No. 151, Ibis, 1864, p. 141). In my first list I have included *C. hiaticula,* believing that the large kind of Ringed Dotterell found here belonged to this species. Since then my attention has been drawn to the observations of the Brighton naturalists (Ibis, 1860, p. 101). It appears that there are two races in England confounded under one name, one of which had been overlooked. The gunners on the coast of Sussex are familiar with this fact, and have noticed that the smaller and darker race arrives about a fortnight later than the larger one, and when this last already possesses eggs or young, whilst the smaller race apparently continues its migration further northward to breed. I am not aware if the larger one is found in southern Europe; but now that the existence of two kinds is known, light will doubtless be thrown on the matter. I have a specimen of each from Brighton for comparison, and hitherto all the Malta specimens agree with the smaller and darker race. Within the last month I have shot two of these here, agreeing with the smaller Brighton bird in every particular of size and colour. Which is the true *hiaticula* of authors it is at present difficult to determine*.

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* [We have been for some time at a loss how to regard the smaller Ringed Plover which yearly makes its appearance on the south coast of England. It probably bears the same relation to *Ægialites hiaticula* that *Tringa schinzi* does to *T. alpina.* In some respects it answers to the description of *Charadrius intermedius* of Ménétriés (*Cat. Voy. au Caucase,*

Strepsilas interpres (No. 196, Ibis, 1864, p. 148). As every record of rare visitors is interesting, I may here mention that an adult male and female, in breeding-plumage, of this species were shot on Fort Manoel Island in the third week of May, and later in the same month three others were exhibited for sale in the market.

Pelecanus onocrotalus? (No. 229, Ibis, 1864, p. 154). I have again to note the occurrence of a species of Pelican on our shores. On the 10th of June, one was seen at the Marsa, where the excavations for the extension of the Great Harbour are going on. It settled on the mud close to one of the steam-engines for pumping out water in the north-west basin. A man went for a gun; but when he came back the bird had flown.

Malta, June 26, 1865.

⁂ Mr. Wright having been so obliging as to transmit to us the specimens both of *Chætusia leucura* and *Charadrius longipes*, described in the foregoing paper, we take this opportunity of giving an illustration of the former, a species which, we believe, has only been figured in the rare French work above mentioned.—Ed.

XXXVII.—*Notes on the Birds of Southern Texas.*

By H. E. Dresser.

[Continued from page 330.]

Geococcyx californianus (Lesson). Paisano.

Abundant throughout the whole mezquite region, and more particularly so near the Rio Grande. I found eggs of this bird

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p. 53); but that bird should have *only* the base of the *under* mandible orange and the feet ash-colour, whereas the specimens we have seen of the smaller race of *Æ. hiaticula* have always the base of the *upper* mandible orange *also*, and the feet yellow. Notwithstanding these discrepancies and a few others, we are almost inclined to think this was the bird M. Ménétriés had before him when describing his *Charadrius intermedius*, which he found to be not rare on the river Lenkoranka, near the Caspian. In the last line of his description, where he says, "il a du reste la taille beaucoup plus svelte que le *C. minor*," there is a manifest misprint, *C. hiaticula* being doubtless the bird intended to be referred to. We are indebted to Mr. Gurney for a specimen of a Ringed Plover from Natal, which seems to agree in every essential respect with those of the small race killed at Brighton, or rather Shoreham.—Ed.]

near San Antonio, in April and May, and even as late as the 23rd September had them brought to me by the vaqueros. It builds a clumsy nest of mezquite-twigs, generally placed at some height on a bough or in the hollow of a mezquite or oak tree, and lays two to four pure white eggs. The food of the Paisano seems to consist entirely of small snakes, lizards, ticks, and large insects, and probably also of field-mice; for when domesticated, it catches mice, and eats them. I examined the stomachs of many, and invariably found them to contain small snakes, lizards, and ticks.

The Mexicans often keep this bird in a semidomesticated state, in order to kill them in case of sickness; for they firmly believe that their flesh is a certain cure for many disorders. I had one at Matamoras which became very tame, and at last so mischievous that I could not let it remain in the house. It would steal and hide anything it could carry off, and was particularly fond of tearing up letters, spilling the ink, and the like. I never had it caged or tied up, and it would frequently pay the neighbours a visit, always, however, returning before evening. I fed it on raw meat, or lizards when I could procure them. I have never seen a wild Paisano on the wing, though I have chased them on horseback, and can bear testimony to their great speed on foot. "Jack," my tame bird, flew with ease, and was very fond of perching on the housetop. He had a strange antipathy to a tame Parrot I had for a short time; and whenever I let it out of the cage, he would ruffle his feathers, get into a regular rage, and finally decamp to some of the neighbours, or go on to the housetop.

Coccyzus americanus (Linnæus). Yellow-billed Cuckoo.

Not uncommon during the summer at Matamoras and Brownsville. It is very common near San Antonio, where it arrives about the middle of April, and immediately begins to build its nest. This is a very scanty structure, composed of dry twigs, lined with a few grass-straws, generally placed on one of the larger limbs of an oak or mezquite tree; and the bird lays therein four eggs of a delicate pale blue colour, sometimes clouded with white. Near the Medina River I found altogether about six or seven nests, and could doubtless have found many more had I been able to spare the time to hunt after them. The birds were not shy, frequently remaining on the nest until I had climbed the tree, and, when leaving the nest, seldom going far away. I do not think the Black-billed Cuckoo (*Coccyzus erythrophthalmus*) is found in Southern or Western Texas, as neither Dr. Heermann nor I have ever noticed it.

CAMPEPHILUS PRINCIPALIS (Linnæus). Ivory-billed Woodpecker.

This bird is found on the Brazos River, where the timber is large; and a planter living on the Trinity River told me that it is not uncommon there. A friend of mine on the Brazos promised to procure the eggs for me, but wrote to me, in May 1864, saying that he had been to the nest and found it to contain young ones. He said that these birds are by no means rare on the Upper Brazos.

PICUS PUBESCENS, Linnæus. Downy Woodpecker.

Occasionally found about San Antonio, but it is a rare visitor there. I shot one near that town on the 1st April, 1864; and Dr. Heermann procured one on the Medina several years ago.

PICUS SCALARIS, Wagler. Texan Sapsucker.

Resident and very common throughout all Texas and North-eastern Mexico, it being, by the way, the only Woodpecker I shot near Matamoras. It breeds abundantly about San Antonio, boring into any tree it finds most suitable.

Male. Iris dark hazel; beak dark horn-blue; legs greenish grey.

PICOIDES —— ?

I noticed a yellow-crowned Woodpecker near Matamoras in July 1863, but, though I followed it for some distance, I was unable to shoot it.

SPHYRAPICUS VARIUS (Linnæus). Yellow-bellied Woodpecker.

Found near San Antonio at all seasons of the year, but rather rare than otherwise. I shot a couple near the Medina River, and Dr. Heermann procured the eggs there some years ago.

Beak dark horn-blue; iris dark brown; legs greenish grey.

HYLATOMUS PILEATUS (Linnæus). Pileated Woodpecker.

Resident and pretty common near all the large rivers where the timber is heavy. A few are found on the Medina, and the eggs have been taken there; but they are not common in that district. On the Colorado and Brazos Rivers this bird was very common, and I found several nests in huge cotton-wood trees, but had no means of getting up to them; besides which, I could not stop long enough to undertake such a task.

Male. Upper mandible bluish-black; lower mandible light blue; iris pale reddish-orange; legs dull black.

CENTRURUS CAROLINUS (Linnæus). Red-bellied Woodpecker.

Common and resident.

CENTRURUS FLAVIVENTRIS, Swainson. Yellow-bellied or Mezquite-Woodpecker.

I found this beautiful Woodpecker plentiful from the Rio Grande to San Antonio, and as far north and east as the Guadaloupe River, after which I lost sight of it. Wherever the mezquite trees are pretty large, there it is to be found, and (so far as my experience goes) very sparingly elsewhere. Near San Antonio it is pretty common, but not so much so as *Centrurus carolinus.* At Eagle Pass, however, it is much commoner than that species.

It breeds near San Antonio, boring for its nest-hole into a mezquite tree; and Dr. Heermann, who has cut out many of their nests, tells me he has never found one in any but a mezquite tree.

Male. Beak dark horn-blue; iris bright red; legs lead-grey.

MELANERPES ERYTHROCEPHALUS (Linnæus). Red-headed Woodpecker.

Travelling from Brownsville to San Antonio, I first noticed this bird near the Nueces River. Near San Antonio it is resident, and not uncommon; and on the Guadaloupe, Colorado, and Brazos Rivers, it is by far the commonest Woodpecker, so that one cannot walk through the wooded "bottom-lands" without seeing at least half a dozen. Near the Medina it is also found, and on the 5th May I found a nest there.

Colaptes auratus (Linnæus). Yellow-shafted Flicker.

We procured a single specimen near San Antonio early in June, this being the only one I saw during my stay in Texas.

Colaptes mexicanus, Swainson. Red-shafted Flicker.

Found occasionally near San Antonio, but of uncommon occurrence. In December 1863 I noticed several near the Nueces River, on the Eagle Pass road; and in February and March 1864 I shot three near Piedras Negras.

Trochilus colubris, Linnæus. Ruby-throated Humming-bird.

Occasionally noticed near Matamoras in July and August. During the winter I observed one or two near San Antonio, on warm days. Early in April, on the weather becoming warmer, they were very numerous near San Antonio, and generally to be found about the large cotton-wood trees. I knew of two nests in low willows overhanging the San Pedro, which were, however, washed away on the 6th June, when that river overflowed its banks after a heavy storm of rain.

Chætura —— ?

Late in April and early in May, quantities of Swifts passed over San Antonio, travelling in a northerly direction; and when out after horses on the Medina on the 5th of the latter month, they were passing overhead all day long. I was unable to shoot one, to see of what species they were, as they generally flew at so great a height; but so far as I could see, they seemed to be of a uniform dark colour.

Antrostomus carolinensis (Gmelin). Chuck-Wills-Widow.

[Comes to the neighbourhood of San Antonio in the spring, and remains to raise its young.—A. L. H.]

I noticed several on the Medina on the 26th April and early in May. On the 18th of this last month I found them very numerous at New Braunfels, and also at Bastrop on the 20th May.

Antrostomus nuttalli (Audubon). Nuttall's Whip-poor-Will.

[I killed one on the Medina. In passing along Devil's

River during the summer, I heard the note every evening, and judge that this bird is abundant there.—A. L. H.]

I obtained a single specimen, shot near the town of San Antonio, where it is of uncommon occurrence; but it was too poor a skin to keep. I had also a damaged specimen sent to me, labelled "Fort Stockton, collected by P. Duffy."

During my stay at Matamoras I never noticed this bird, but was told by a sportsman living there that a very small Night-Hawk, which I imagine to be this species, is very common at a rancho about twenty-five miles from Matamoras, on the Monterey road.

Chordiles popetue (Vieillot). Night-Hawk.

At Matamoras this and the two following species were abundant during the summer-season, and about dusk thousands of Night-Hawks might be seen flying in towards the river from the prairies. I shot a good many, and found this species less common than the two others; still there was no want even of these birds.

At San Antonio I found *C. popetue* and *C. texensis*, but never procured a single specimen of *C. henryi*; nor has Dr. Heermann ever procured one there. This species, however, is not common at San Antonio, as I only procured one specimen there.

Chordiles henryi (Cassin). Western Night-Hawk.

Very abundant at Matamoras and as far east as the Sal Colorado, after which I saw none.

Bill black; iris black; legs purplish-black.

Chordiles texensis (Lawrence). Texas Night-Hawk.

Very common at Matamoras during the summer season, and thence to San Antonio and the eastward. At San Antonio I first noticed them (in the spring) on the 2nd May, when I saw seven or eight flying about at noon-day. A few days later they were very numerous. They remain there until the end of September, and soon after disappear, as I noticed none later than the first week in October.

Ceryle alcyon (Linnæus). Belted Kingfisher.

Common in the Rio Grande and throughout Texas, where it remains to breed.

Beak horn-blue; legs dark blue-grey; iris dark brown.

CERYLE AMERICANA (Gmelin). Texas Kingfisher.

I noticed a couple of these birds at Matamoras in August, and found them common on the Nueces and Leona Rivers, at which latter places they breed. In December I noticed several near Eagle Pass. It is, however, by no means so common a bird as the preceding.

MILVULUS FORFICATUS (Gmelin). Scissor-tail.

I found this beautiful and graceful bird very abundant at Matamoras and in Western Texas (where it is known by the name of "Texan Bird of Paradise"), as far east as the Rio Guadaloupe. It arrives in the neighbourhood of San Antonio late in March, and remains until the middle or latter end of October. It breeds abundantly near San Antonio, building its nest in a mezquite or wesatche tree, and laying from three to four eggs, which are pure white, blotched with large spots of a dark red colour.

These birds are of a quarrelsome and fearless disposition, rarely brooking intruders near their home: during the breeding-season I have often, when travelling, pulled up to admire four or five of them fighting on the wing, and showing their long tails and the rich scarlet colour under the wings to the fullest advantage. To the eastward I saw none of these birds after passing the Guadaloupe River, but was told that they have occasionally been seen on Galveston Island.

The difference in the plumage of the sexes is very slight, the female generally having the tail somewhat shorter, and the scarlet under the wing rather paler, than the male.

Male. Beak blackish-brown; legs black; iris chestnut-brown.

TYRANNUS CAROLINENSIS, Baird. King-bird.

[Observed occasionally near San Antonio in the spring and autumn.—A. L. H.]

I myself never saw this bird at San Antonio, but in May and June found it numerous near Gonzalez, Bastrop, Alleyton, and Houston. Early in June I found several nests, containing eggs, on Galveston Island, all however too near hatching to allow of their being blown.

? TYRANNUS COUCHI, Baird. Couch's Flycatcher.

I saved out of the wreck of my skins, collected at Matamoras, one, a female of either this bird or *Tyrannus melancholicus*; but as the tail is somewhat damaged, it is hard to decide to which species it belongs. Dr. Sclater tells me he thinks it to be *T. couchi*, but says he is not quite sure. Whichever it be, I found the species, in July and August 1863, not uncommon near Matamoras and Brownsville, where it was breeding; but on my second visit to that town in August 1864, I saw none, though I visited the same places where I had shot several the year before.

Female. Beak blackish brown; legs brownish lead-colour; iris brown.

MYIARCHUS CRINITUS (Linnæus). Great Crested Flycatcher.

I have a couple of specimens shot at San Antonio in the month of April.

MYIARCHUS MEXICANUS (Kaup). Ashy-throated Flycatcher.

Arrives at San Antonio at the latter end of April, the first that came under my notice being one I shot on the 23rd of that month on the Medina. It breeds near the Medina and San Antonio Rivers, making its nest in a hollow tree, or taking possession of a deserted Woodpecker's hole. I noticed these birds as far east as the Guadaloupe River, where they were common; but further to the eastward I observed very few.

The eggs are peculiarly marked with a multitude of purple and brown dashes and lines on a dull yellowish-brown ground, and are very similar to those of *Myiarchus crinitus*.

Male. Beak brownish-black, light blue at the base of the lower mandible; legs black; iris dark brown.

SAYORNIS FUSCUS (Gmelin). Pewee.

[Only seen near San Antonio, in its migrations north and south.—A. L. H.]

Not common about San Antonio; indeed I did not notice more than three or four during the spring. I suppose, however, that it breeds near Houston, as I saw several at that place early in June.

SAYORNIS SAYUS (Bonaparte). Say's Flycatcher.

I first noticed this bird in the month of November 1863, when walking in the garden of the arsenal at San Antonio, and there of course could not shoot it. On my journey to Eagle

Pass in December, I saw several daily, and generally noticed them in pairs. They would perch on a bush by the roadside, occasionally darting off after some insect, and, so soon as we drove near, would fly on to a convenient perch some distance ahead, thus keeping in advance of us for miles.

During the months of January and February they were not uncommon; but after that I lost sight of them altogether. They seem to prefer the open country, as I generally found them on the prairies, and never in the mezquite thickets.

Male. Bill black; gape orange-yellow; legs black; iris dark brown. Stomach containing small insects.

Contopus borealis (Swainson). Olive-sided Flycatcher.

Not uncommon near San Antonio during the winter season.

Contopus richardsoni (Swainson). Short-legged Pewee.

Very common near Matamoras during the summer, and breeding there. I also shot one specimen near San Antonio in May.

Bill dark brown above, light below; iris dark brown; legs black; stomach containing small insects.

Contopus virens (Linnæus). Wood-Pewee.

Very common in the wooded river-bottoms near San Antonio during the summer, arriving late in April or early in May. The call-note is a low prolonged whistle.

Upper mandible brown; lower mandible dull flesh-colour; legs black; iris dark brown; stomach containing minute coleopterous insects.

Empidonax trailli (Audubon). Traill's Flycatcher.

Common during the summer-season near San Antonio and to the eastward, breeding there, and building a small hanging nest. I also had the eggs sent to me from Systerdale.

Upper mandible dark brown; lower mandible dull light brown; legs blackish; iris dark brown; stomach containing minute insects.

Empidonax minimus (Baird fratt.). Least Flycatcher.

Common near San Antonio during the summer.

Bill dark brown above, lighter below; legs blackish; iris dark brown; stomach containing small insects.

Empidonax acadicus (Gmelin). Small Green-crested Flycatcher.

Not uncommon near San Antonio during the summer.

Upper mandible dark brown; lower mandible light flesh-colour; iris brown; legs blackish. Stomach containing small insects.

Empidonax flaviventris (Baird fratt.). Yellow-bellied Flycatcher.

Common near San Antonio during the summer, arriving there in April.

Bill dark above, fleshy brown below; legs blackish; iris dark brown. Stomach containing insects.

Pyrocephalus rubineus (Boddaert). Red Flycatcher.

A fine male specimen was shot on the San Pedro, near San Antonio, in August 1863, and sent to Dr. Heermann, who kindly gave it to me. On the 25th September, when shooting near the San Pedro, I noticed one, a young male, and after some trouble succeeded in killing it. It was very shy, and made its way through the low wesatche bushes like a Hedge-Sparrow. On the 5th April, 1864, I again shot a young male after a chase of nearly an hour, when I got a long shot at it and knocked it over. It was quite as shy as the one I procured before, but, unlike that, it kept to the more open part of the country, and always perched on some elevated place. Its note somewhat resembled that of *Milvulus forficatus.*

Young Male. Bill brownish black; legs dull brown; iris dark hazel.

Turdus nanus, Audubon. Dwarf Thrush.

[I procured the eggs once on the Medina.—A. L. H.]

Turdus migratorius, Linnæus. American Robin.

Not uncommon near San Antonio during the winter, and found more abundantly during a severe "norther."

Sialia sialis (Linnæus). Bluebird.

[Comes in the winter, and sometimes breeds here.—A. L. H.]

I noticed large flocks of these birds in the Bandera Hills in November. After that time I observed a few occasionally until February, later than which I saw none.

Sialia arctica (Swainson). Rocky-Mountain Bluebird.

[Comes in the winter, but breeds abundantly further north. I have eggs from the north-west coast.—A. L. H.]

Very abundant throughout the whole of Southern Texas during the winter; indeed I shot fifteen in one forenoon, in order to pick out choice specimens for skinning. A German sent me a couple of eggs from Systerdale, which he said were of this bird, and which on comparison agree with those in the collection of Dr. Heermann.

Male. Beak and legs black; iris dark brown. Stomach containing hack-berries.

Regulus calendula (Linnæus). Ruby-crowned Wren.

Common at San Antonio during the winter.

Regulus satrapa (Lichtenstein). American Golden-crested Wren.

Found at San Antonio during the winter months.

Anthus ludovicianus (Gmelin). Louisiana Pipit.

Not uncommon near San Antonio during the months of December and January.

Mniotilta varia (Linnæus). Black-and-white Creeper.

Noticed first at San Antonio about the middle of March. Dr. Heermann tells me that he has found it breeding on the Medina.

Parula americana (Linnæus). Blue Yellow-backed Warbler.

Passes San Antonio in the spring and autumn.

Geothlypis trichas (Linnæus). Maryland Yellow-throat.

I noticed great numbers on the Medina early in May, and also shot several in September.

Geothlypis philadelphia (Wilson). Mourning Warbler.

Early in May I shot five in the long weeds growing in the Medina river-bottom. They were abundant, but shy, and difficult to get near.

In 1864 the migration of the Warblers must have been unusually late, for Dr. Heermann told me that he generally found them passing late in March or early in April; and accordingly I kept a sharp look out about that time, but until the commencement of May I scarcely shot any, and then, unluckily, I had very little time to spare. Dr. Heermann was out several times, but, owing to his lameness, he could only make his way through the long weeds with difficulty, and besides was unable to shoot with any degree of precision. Thus our stock of Warblers is unusually small, considering the rich field we had for our operations.

Oporornis formosus (Wilson). Kentucky Warbler.

Passes San Antonio in the spring and autumn.

I saw several on the Medina in May, but only shot one specimen.

Helminthophaga chrysoptera (Linnæus). Golden-winged Warbler.

Passes San Antonio in the spring and autumn.

Helminthophaga ruficapilla (Wilson). Nashville Warbler.

Passes San Antonio in the spring and autumn. On the 6th May I found it on the Medina, and shot several.

Helminthophaga celata (Say). Orange-crowned Warbler.

Passes San Antonio in the spring and autumn.

Siurus noveboracensis (Gmelin). New York Water-Thrush.

[Found all the summer on the banks of the Medina.—A. L. H.]

I shot one specimen in December, but did not see any more until the 24th April, after which I noticed them daily.

Dendrœca virens (Gmelin). Black-throated Green Warbler.

Passes San Antonio in the spring and autumn. I noticed it as early as March, and shot one specimen then.

Dendrœca chrysoparia, Sclater.

One specimen was procured by a young man named Ogden, together with several other Warblers, at his step-father's (Howard's) rancho on the Medina. He gave it to Dr. Heermann, who kindly transferred it to me, as Ogden collected for us both, and I gave my attention more particularly to birds, whereas Dr. Heermann is more particularly an egg-collector*.

DENDRŒCA CANADENSIS (Linnæus). Black-throated Blue Warbler.

Passes San Antonio in spring and autumn.

DENDRŒCA CORONATA (Linnæus). Yellow-rumped Warbler.

[Some few pass the winter here, but most of them are only seen on their usual migration.—A. L. H.]

DENDRŒCA BLACKBURNIÆ (Gmelin). Blackburnian Warbler.

Common near San Antonio in spring and autumn.

DENDRŒCA CASTANEA (Wilson). Bay-breasted Warbler.

Passes San Antonio in spring and autumn.

DENDRŒCA ÆSTIVA (Gmelin). Yellow Warbler.

Common near San Antonio in spring and autumn. It occasionally breeds near the Medina River, and I also found it breeding on the Colorado River and near Matamoras.

DENDRŒCA MACULOSA (Gmelin). Black-and-yellow Warbler.

Passes San Antonio in spring and autumn.

DENDRŒCA SUPERCILIOSA (Boddaert). Yellow-throated Warbler.

Passes San Antonio in spring and autumn.

[I observed several about Brownsville in December 1862. —A. L. H.]

MYIODIOCTES MITRATUS (Gmelin). Hooded Flycatcher.

Found occasionally near San Antonio in the spring and autumn.

MYIODIOCTES PUSILLUS (Wilson). Green Black-cap Flycatcher.

Passes San Antonio in spring and autumn. Early in May I noticed several in company with some of the preceding species, and shot a couple.

MYIODIOCTES CANADENSIS (Linnæus). Canada Flycatcher.

Not uncommon near San Antonio in spring and autumn. Early in May I shot several on the Medina.

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* *Cf.* Ibis, 1865, pp. 88, 237.

SETOPHAGA RUTICILLA (Linnæus). American Redstart.

Very common near San Antonio in the spring and autumn. On the Medina I noticed the first on the 27th April.

PYRANGA RUBRA (Linnæus). Northern Scarlet Tanager.

[I shot one in the early spring on the Medina some years ago. It breeds at El Paso, on the upper Rio Grande.—A. L. H.]

On the 23rd April I followed one for some distance, near the San Pedro, but did not succeed in shooting it.

PYRANGA ÆSTIVA (Gmelin). Summer Redbird.

Common during the summer season near San Antonio, arriving there about the middle of April.

HIRUNDO HORREORUM, Barton. Barn-Swallow.

Common during the summer both at Matamoras and San Antonio. They arrive at Eagle Pass early in March, as I noticed the first on the 9th of that month.

HIRUNDO LUNIFRONS, Say. Cliff-Swallow.

Common at San Antonio and Matamoras during the summer. At Eagle Pass I noticed a couple on the 7th March, and on the 10th they were very numerous. In July, on the way from Nuevo Laredo to Matamoras, when seeking after water, I saw a long cliff overhanging a ravine, which was literally covered with the nests of these birds.

COTYLE RIPARIA (Linnæus). Sand-Martin, or Bank-Swallow.

Common throughout the whole country. I noticed the first at Eagle Pass on the 20th February.

COTYLE SERRIPENNIS (Audubon). Rough-winged Swallow.

At Eagle Pass, the first of these birds I noticed arriving from the south I saw on the 21st February. Both there and near San Antonio they are very common during the summer, breeding in the towns, making their nests under the eaves and in holes in the old walls, and laying pure white eggs, the first of which, that I got, were taken at San Antonio on the 25th April.

Male. Bill black; legs brownish-black; iris dark brown.

PROGNE PURPUREA (Linnæus). Purple Martin.

Common in all the parts of Texas that I visited during the summer. There, as in the north, these birds are universally protected, and "Martin-houses" are set up near almost all the dwellings in the country. At Eagle Pass I noticed the first on the 6th March, and a few days later they were very numerous.

Ampelis cedrorum (Vieillot). Cedar-bird.

Very common during the winter at San Antonio and Eagle Pass, but I noticed none later than the middle of April.

Phainopepla nitens (Swainson). Crested Black Flycatcher.

When at Eagle Pass, I had taken up my quarters in the powder magazine at Fort Duncan, and in front of my abode there were a few mezquite trees scattered about. On one of these I had several times observed a bird which, when on the wing, seemed to have pied wings, but when perched seemed of a uniform black colour. I at last succeeded in shooting it, and found it to be an adult male of this species. It had the bill and legs black; iris blood-red; and the stomach filled with the berries of a sort of mistletoe that grows abundantly on the mezquite trees. Some days later, when sitting writing near the open door, I saw another of these birds on a tree near. I watched it with an opera-glass for some minutes, and noticed that the crest was carried erect, and was much recurved, like that of our *Parus cristatus*; then taking up my gun, which was close to me, I shot it from where I sat. These two were the only examples of the species that came under my notice during my stay in the country.

Collyrio ludovicianus (Linnæus). Logger-head Shrike.

Common near San Antonio during the summer.

Vireo olivaceus (Linnæus). Red-eyed Vireo.

Noticed near San Antonio in the spring and autumn.

Vireo gilvus (Vieillot). Warbling Vireo.

I first noticed this species on the 5th April in a mezquite thicket near San Antonio, where I noticed a pair, but only secured the male bird. The call-note was a long continued hissing or churring sound, and the song very sweet. Dr. Heermann has found this bird breeding near the Medina and San Antonio.

Legs light blue lead-colour; iris dark brown.

Vireo belli (Audubon). Bell's Vireo.

Not uncommon during the summer near San Antonio, and remaining there to breed. I found a nest on the 2nd July, in a wesatche bush near the San Pedro, containing three eggs of this species and one of the Cow-Bunting (*Molothrus pecoris*); but being anxious to procure the bird also, I left it, and on my return some days later I found the foster-parent there, but the nest was torn down, and the eggs on the ground, all smashed, excepting that of the *Molothrus*, which I now have, together with the bird, which I shot. Dr. Heermann found a nest on the Medina about the same time. The nest of this species is beautifully formed of fine grass, and hung from the small twigs of some tree. The eggs, three to four in number, are very small, white, with an occasional reddish dot on the larger end. The nest that Dr. Heermann took was attached to the pendent twigs of a willow tree.

Male. Upper mandible dark brown; lower mandible light brownish blue; iris brown. Stomach containing small green caterpillars.

Vireo noveboracensis (Gmelin). White-eyed Vireo.

Common near San Antonio during the summer, and remaining there to breed.

Vireo solitarius (Wilson). Blue-headed Vireo.

I noticed and shot several of these birds near San Antonio late in the autumn and early in the spring, but do not think any remain there to breed.

Mimus polyglottus (Linnæus). Mocking-bird.

This unrivalled songster is one of the commonest birds throughout the country. In July 1863, on my arrival at Matamoras, I found lots of young birds offered for sale in the market-place, at a *picayune* (three pence) each, and bought several, but was unable to rear them, as they required so much of my time. I even found a nest, containing fresh eggs, as late as that.

Near San Antonio they are also very common, and are very early breeders, as I found their eggs and those of the Cardinal (*Cardinalis virginianus*) some time before I found any of the other smaller birds breeding. They build a somewhat bulky nest of prickly sticks, lined with fine roots and grass, and lay from three to five eggs. As cage-birds they are held in high esteem, and to my knowledge a Mexican at Matamoras refused forty dollars for one that had been in his possession for a couple of years. It had become very tame, and was a perfect adept at mimicking the notes of many birds occurring there, and even the cries of other animals. They are very difficult to rear, but in this respect the Mexicans are more successful than strangers; which fact may be attributed partly to the patience with which they constantly attend to them, and partly to the food they give them, which is a sort of paste composed chiefly of maize-meal and Chili colorado (red pepper).

OREOSCOPTES MONTANUS (Townsend). Mountain Mocking-bird.

Not uncommon near San Antonio during the winter months, and very common near Eagle Pass, where they are found on the plains near the town. When disturbed they run and dodge through the cactuses and mezquite bushes, seldom taking wing unless driven to an open place. They seem to prefer the flat bush-covered plains, and I seldom saw one on a tree. A lad, who was collecting for me, procured a couple of the eggs of this bird in the middle of May, during my absence at Houston. These are now in Dr. Heermann's possession. As a general thing, however, I do not think they breed in that part of the country, since I never noticed any there during the summer.

Male. Legs light brown; bill blackish-brown; iris bright yellow. Stomach containing small insects.

HARPORHYNCHUS CURVIROSTRIS (Swainson). Curve-billed Thrush.

At Matamoras I found this bird very common during the summer months, but did not notice any nearer San Antonio than the Rio Nueces. During my stay at Eagle Pass in February and March I found them abundant, and was told by the Mexicans that they remain there to breed. On my journey towards Matamoras, in July 1864, I found many nests, but all either empty or with young, except one near Roma, which contained a single fresh egg. I had no trouble in identifying it, as the bird remained in the same tree the whole time.

The nest of this bird is bulky, generally composed of prickly sticks, lined with grass and fine roots, and not unlike a Magpie's nest on a small scale. The egg much resembles that of *Harporhynchus rufus,* but is of a rather brighter colour. They are fond of frequenting small villages, and I have generally found the nests in the gardens or courtyards of the houses near the road.

Male. Bill blackish; legs light brown; iris light orange-yellow. Stomach containing beetles and caterpillars.

CAMPYLORHYNCHUS BRUNNEICAPILLUS (Lafresnaye). Brown-headed Wren.

In December 1863, when at Eagle Pass, I noticed several of these birds amongst the cactuses on the sand-plains near the village. They were very shy and difficult to shoot, as they dodged through the bushes, running very swiftly. Between Eagle Pass and the Rio Nueces I noticed a few, but further north and east of that river I never saw any. In July 1864, after passing the Nueces on my way to Laredo and Matamoras, I observed numerous nests on the roadside. Some were half-finished, and probably deserted in that state; others contained young birds; while others, again, were already left by the young birds. In one only did I find eggs. They were three in number, and I now have them in my collection. The nest of this bird is composed externally of light-coloured straws, and internally of cotton, if placed near the roads along which cotton was being hauled; but otherwise, of feathers of every description; indeed by tearing up an old nest I could form a pretty good idea of the birds frequenting that part of the country. In the lining of one I tore up, between Guerrero and Laredo, I could distinguish feathers of five different species of birds.

The nest, which is purse- or poke-shaped, is generally placed on the top of a dead bush in some exposed place, or between the large leaves of a cactus plant; and the eggs (which, to judge from the number of young I noticed in several nests and the one nest I took, are from three to four in number) are of a peculiar dark salmon-colour.

Male. Bill blackish; lower mandible dull light bluish at the base; legs flax-brown; iris reddish-brown.

CATHERPES MEXICANUS (Swainson). White-throated Wren.

Not uncommon near San Antonio, remaining there to breed. One of these birds frequented the printing-office at San Antonio, an old, half-ruined building, where its familiar habits made it a great favourite with the workmen. They told me that the previous spring it had built a nest and reared its young in an old wall close by.

In the following spring (1864) I went again to look for it, but was told that it had disappeared, having probably met the fate that generally befalls favourites—that of death from the claws of a cat—as it had become very tame.

At Dr. Heermann's rancho on the Medina we procured the eggs both of this and the two following species (*Thryothorus ludovicianus* and *T. bewicki*) ; and as Dr. Heermann amused himself by nailing up small cigar-boxes, having a hole cut in front, in every place where these birds were likely to build, we had ample means of watching them. Indeed we had only to lift up the lid in order to see the progress they had made; for these birds do not (so far as my experience goes) build a covered nest; and when we wished to take one we took box and all, thus having the nest ready packed!

THRYOTHORUS LUDOVICIANUS (Lichtenstein). Great Carolina Wren.

Not uncommon near San Antonio, remaining there throughout the year. We procured the first eggs of this bird on the 20th April, out of a nest in one of Dr. Heermann's cigar-boxes; but on the 27th April I found a nest containing young birds in a similar receptacle, which had been put away under the eaves of a house near San Antonio.

Male. Bill dark brown; base of lower mandible light brown; legs light flesh-brown; iris brown.

THRYOTHORUS BEWICKI (Audubon). Bewick's Wren.

Not so common as the preceding species, but by no means rare near San Antonio. On the 1st April we procured three eggs from a nest built in one of the cigar-boxes. The eggs of this bird much resemble those of *T. ludovicianus*, but are somewhat smaller in size.

Male. Bill light brown; base of lower mandible lighter; legs purplish-grey; iris brown.

Troglodytes hyemalis (Vieillot). Winter-Wren.

Only an occasional visitor to the neighbourhood of San Antonio.

Certhia americana, Bonaparte (var. *mexicana*, Gloger). American Creeper.

Not uncommon in southern and south-western Texas. I often noticed it on the Medina and San Antonio rivers. I have two specimens which I shot in March. Dr. Heermann tells me that he has found the nest of this bird near Howard's rancho on the Medina River.

Sitta carolinensis, Gmelin. White-bellied Nuthatch.

I noticed this bird often, when on the Medina, late in April and early in May, and procured several specimens.

Polioptila cærulea (Linnæus). Blue-grey Gnatcatcher.

In March 1864, when peccary-hunting on the Rio Savonal, I found these birds very abundant, but a week later I could not discover a single one. In April, however, I noticed several near San Antonio. I have one specimen which I shot on the Hondo in March.

Male. Upper mandible blackish; lower mandible light brown; legs dark lead-colour; iris dark hazel. Stomach containing minute coleopterous insects and gnats.

Polioptila melanura, Lawrence. Black-tailed Gnatcatcher.

I shot a fine male specimen of this bird on the San Antonio River on the 30th September, 1863, but, unfortunately, almost blew it to pieces, and thus was unable to make even a passable skin of it.

Lophophanes bicolor (Linnæus). Tufted Titmouse.

I shot one specimen of this bird on the Medina, 9th April, 1864, and at the same time noticed several others. This, however, was the only occasion on which I observed this bird in Texas.

Lophophanes atricristatus, Cassin. Black-crested Titmouse.

Very common near San Antonio and Houston, remaining there to breed. The nest, however, is difficult to find, as the birds are very wary. I found one in a hollow tree at the head springs of the San Antonio River late in April; but it contained young.

I shot a Titmouse at Matamoras in August 1863, which I am almost sure was *Lophophanes inornatus,* but unfortunately the skin was lost with the rest of the specimens I collected there.

Male. Bill black; legs dark lead-blue; iris dark brown.

PARUS CAROLINENSIS, Audubon. Carolina Titmouse.

Not uncommon in the neighbourhood of San Antonio.

EREMOPHILA CORNUTA (Wilson) (var. *occidentalis,* M'Call). Western Shore-Lark.

From October to the end of March the prairies near San Antonio swarm with Shore-Larks, and great numbers are shot for the table. When at Galveston in May and June 1864, I noticed and shot several specimens; and though I could not succeed in finding any nests, I feel sure that they were breeding there.

On comparing two specimens, both adult males, one shot at Musquash, New Brunswick, in December 1861, and the other at San Antonio in December 1863, I find the Texan specimen much less in size ($\frac{5}{8}$ in. shorter); the bill somewhat smaller; the back and wings much paler in colour; the crown jet-black, instead of black dashed with yellow; the forehead and line over and beyond the eye dull white, instead of yellow; auriculars dull white, with a tinge of straw-colour, whereas in the New Brunswick specimen they are yellow, and the throat of the Texan specimen of a somewhat paler tinge.

CHRYSOMITRIS TRISTIS (Linnæus). Yellowbird.

[Not uncommon near San Antonio during the summer-season.—A. L. H.]

PLECTROPHANES ORNATUS, Townsend. Chestnut-collared Bunting.

Found in flocks, early in the spring, on the prairies near San Antonio, but is not a common bird.

PLECTROPHANES MELANOMUS, Baird. Black-shouldered Bunting.

On the 4th April Dr. Heermann noticed near the town of San

Antonio a small flock of (as he supposed) Chestnut-collared Buntings; and as I wanted some specimens, he and I went, the same evening, in search of them, and found them on the banks of the San Pedro. Though they were not very shy, we only succeeded in getting a shot apiece at them: I knocked down two, and he one. On picking them up, Dr. Heermann instantly recognized them to be *P. melanomus,* a bird which hitherto he had not noticed in that part of the country. I followed the flock for some distance, but was unable to procure any more.

Male. Upper mandible brownish horn-colour; lower mandible with the tip and a line underneath nearly black; legs brownish-black; iris dark brown. Stomach containing small seeds.

PLECTROPHANES MACCOWNI, Lawrence. M'Cown's Bunting.

This bird is found in small flocks, early in April, on the prairies near San Antonio. It is not very common, and I only procured two specimens during my stay in that part of the country.

PASSERCULUS ALAUDINUS, Bonaparte. Lark-Sparrow.

Early in April I found this bird very common on the San Pedro, close to the town of San Antonio, and shot several specimens. I generally found them in parties of two or three, amongst the rushes and flags that cover the banks of the streams.

Male. Upper mandible dark brown; lower mandible dark flesh-colour; legs light cinnamon; iris dark brown. Stomach containing small seeds.

POŒCETES GRAMINEUS (Gmelin). Grass-Finch.

Common near San Antonio in August and September, as well as in May and June; a few remaining to breed there.

COTURNICULUS PASSERINUS (Wilson). Yellow-winged Sparrow.

[Not uncommon in the summer-season near San Antonio.—A. L. H.]

I procured a single specimen near San Antonio in the early summer.

CHONDESTES GRAMMICA (Say). Lark-Finch.

Very abundant throughout Texas during the summer, arriving in the neighbourhood of San Antonio late in March, and leaving early in October. I found many nests, and have collected a large series of the eggs of this bird. The nest, which is formed of fine roots and grass, is generally placed on a mezquite tree or bush; and the eggs, which vary in number from three to five, are white, spotted and streaked with black and blackish-brown.

Male. Bill horn-blue; lower mandible paler; legs flesh-colour; iris brown.

ZONOTRICHIA GAMBELI (Nuttall). Gambel's Finch.

Common near San Antonio during the winter, arriving late in September or early in October. Some few may remain there to breed, as I noticed two or three about in June.

Male. Bill brown; legs cinnamon-brown; iris dark hazel.

ZONOTRICHIA QUERULA (Nuttall). Harris's Finch.

Occurs near San Antonio in the spring, when on its migration north. I procured two specimens on the Medina.

JUNCO HYEMALIS (Linnæus). Snow-bird.

[Found occasionally near San Antonio.—A. L. H.]

POOSPIZA BILINEATA (Cassin). Black-throated Sparrow.

In July and August I found this beautiful little Sparrow very abundant in the mezquite thickets near the town of Matamoras. In December it was equally common at Eagle Pass; but at San Antonio it is quite a rare bird. I noticed it on two or three occasions at Howard's rancho, on the Medina River; and late in June a nest containing four eggs was brought to the rancho. These are now in Dr. Heermann's possession.

On my way to Laredo and Matamoras, in July 1864, after passing the Nueces River, this bird was very abundant; and near Laredo I found several nests, some containing young birds, and some eggs near hatching. One nest, however, which I took on the 20th July, contained three fresh eggs. These I now have in my collection, having shot the bird in order to identify them satisfactorily. The nest was placed in a low bush, and carefully concealed. It was composed of straws, lined with fine roots; and the eggs, three in number, are nearly white, with a delicate bluish tinge.

On my journey down the river I found many nests, all, however, either containing young or empty; some of these were partly lined with cotton.

Although not wild, still I found these birds very restless and difficult to shoot, as they dodge and creep through the low bushes so as to be soon lost sight of. I never heard any note from them excepting a low chirp.

Spizella pusilla (Wilson). Field-Sparrow.

I noticed a few of these birds near San Antonio in December and March, and shot a couple of specimens.

Spizella socialis (Wilson). Chipping Sparrow.

I saw and shot a single specimen near San Antonio, on the 10th April 1864.

Spizella pallida (Swainson). Clay-coloured Sparrow.

In the month of April Dr. Heermann and I found this bird plentiful in the fields near San Antonio, consorting with *Melospiza lincolni* and other Sparrows. They remained until about the middle of May, after which I noticed none. Dr. Heermann told me that he had never observed any near San Antonio before this year (1864).

Male. Bill light brown at base, dark brown along the top and at the tip; legs light clay-yellow, with a reddish tinge; iris dark brown. Stomach containing small seeds.

Melospiza lincolni (Audubon). Lincoln's Song-Sparrow.

From March to May I found this bird very abundant in the fields near the San Antonio River and in some swampy ground. They seem to prefer this sort of locality, and the banks of the rivers, keeping amongst the flags and rushes.

Male. Bill dark brown; legs light brown; iris brown. Stomach containing small seeds.

Peucæa cassini (Woodhouse). Cassin's Finch.

[Not rare on the prairies near the Medina, where they pass the season and breed.—A. L. H.]

When at Howard's rancho early in May, I found this bird by no means uncommon, but only saved one specimen. The species is easily distinguished as it rises in the air from a bush, with a peculiar fluttering motion of the wings, at the same time singing, and will suddenly drop into the bushes again. During my absence at Houston, Dr. Heermann procured the eggs on the Medina; and I myself, when travelling towards Laredo in July, found a nest which I am nearly certain was of this bird; but I was unfortunately unable to shoot the owner (though I saw it pretty distinctly), as I had left my gun in camp, and only had a revolver with me. The nest was placed on a low bush not above a foot from the ground, and in its construction resembled that of *Poospiza bilineata.* The eggs, three in number, were pure white (thus agreeing with those taken by Dr. Heermann), and rather larger and more elongated than those of the species just mentioned. They were, however, so near hatching that I was only able to save one, and that with so large a hole that it is almost worthless as a specimen.

CALAMOSPIZA BICOLOR (Townsend). Lark-Bunting.

Common near San Antonio during the winter. In December I noticed several flocks near Eagle Pass. They frequented the roads, pecking amongst the horse-dung; but are shy, and when disturbed the whole flock go off together, uttering a low, melodious whistle. In May and June several were about near Howard's rancho; and on my return from Houston in June, I succeeded in shooting one in the full summer plumage, when its specific name is peculiarly appropriate. I do not, however, think that, as a general thing, they remain to breed near San Antonio.

Male. Bill and legs pale brown; iris dark brown.

EUSPIZA AMERICANA (Gmelin). Black-throated Bunting.

Early in May I found numbers of these birds in the mezquite thickets near the San Antonio and Medina Rivers; and, as I found them equally numerous in July, I may safely infer that they breed there. Dr. Heermann got some eggs near the Medina that he thought were those of this species; but he was unable to procure the bird, or to see it close enough to satisfy himself as to what it was.

Male. Bill horn-blue; legs light brown; iris dark brown. Stomach containing small seeds.

Guiraca ludoviciana (Linnæus). Rose-breasted Grosbeak. [Once noticed near San Antonio.—A. L. H.]

Guiraca cærulea (Linnæus). Blue Grosbeak.

Common near Matamoras in July and August. It breeds there; but, owing to the lateness of the season, I was unable to procure the eggs.

Male. Bill dark horn-blue above, light blue below; legs brownish-black; iris dark brown.

Cyanospiza ciris (Linnæus). Nonpareil.

Very common during the summer both at Matamoras and San Antonio, breeding at both places.

Pyrrhuloxia sinuata, Bonaparte. Texan Cardinal.

Why this bird should be called the "Texan" Cardinal I cannot make out, for it is rather a straggler from Mexico than a bird of Texas. Near Eagle Pass and Piedras Negras I found it abundant; but after travelling a few miles into Texas it becomes scarce, and further north and east than the Leona I never noticed one. I was told by the Mexicans that quantities breed near the town of Eagle Pass, and I saw not a few in cages that had been reared from the nest.

It is a shy bird, and difficult to shoot. When followed, it flies about uneasily, perching on the top of some high bush, and erecting its long crest, uttering a clear plaintive whistle. Sometimes it would take to the thick brushwood and creep through the bushes; so that it was impossible to get a shot at it. On the lower Rio Grande it is of uncommon occurrence; but I noticed one pair near Matamoras in August 1864.

Male. Bill yellow; upper mandible rather dusky; iris dark brown; legs brownish flesh-coloured. Stomach containing very small seeds.

Cardinalis virginianus, Bonaparte. Cardinal.

Common throughout Texas during the summer, and indeed almost all the year, excepting where *Pyrrhuloxia sinuata* is found. In such localities it is not so abundant as that bird. At Matamoras it is very common, and may be seen, caged, in almost every Mexican hut. I took quantities of the eggs of this species near San Antonio in April and May.

PIPILO ARCTICUS, Swainson. Arctic Towhee.

When deer-hunting in the Bandera Hills, in November 1863, I noticed several of these birds near our camp, and shot three specimens. I also procured several near San Antonio during the winter.

Male. Bill horn-blue; legs flesh-coloured; iris bright red.

Amongst the specimens shot near San Antonio is one that corresponds pretty well with Professor Baird's description of *Pipilo megalonyx*; but I am somewhat doubtful as to its being anything but a variety of *P. arcticus* with rather long claws.

MOLOTHRUS PECORIS (Gmelin). Cow-bird.

Very common throughout the country; but I only once found the egg of this species, which, like our Cuckoo, makes no nest of its own, but deposits its egg in the nest of some small bird. The one I found was in the nest of a *Vireo belli*; and, to judge from other nests brought to me containing Cow-birds' eggs, they seem to make use of the nests of the small Flycatchers in preference to those of other birds.

AGELÆUS PHŒNICEUS (Linnæus). Red-winged Starling.

Very common, breeding abundantly on the banks of the rivers and streams. By the side of the Rio Grande and the San Antonio River I have seen vast flocks roosting in the reeds.

XANTHOCEPHALUS ICTEROCEPHALUS (Bonaparte). Yellow-headed Blackbird.

In the autumn of 1863 I shot a couple of this species, which were the only specimens that I then saw; but on the 23rd April 1864, when taking my usual early morning-walk outside San Antonio, I found the prairie literally covered with these birds. During the ensuing week vast flocks remained near the town, after which they disappeared suddenly, nor did I subsequently notice any more.

STURNELLA NEGLECTA, Audubon. Western Meadow-Lark.

Very common during the winter near San Antonio, and a few remain there to breed. I did not, however, succeed in procuring more than three eggs, which are similar to those of *Sturnella magna* in colour and marking, but somewhat smaller in size.

ICTERUS SPURIUS (Linnæus). Orchard-Oriole.

Very common near San Antonio during the summer, arriving early in April. I procured several of the nests of this species, all composed of light-coloured flexible grasses, and suspended from the upper branches of mezquite trees or bushes. Near Houston and on Galveston Island I also found them breeding. I noticed that the Texan bird is considerably smaller than that found in the Northern States; this, however, is probably only a difference caused by the climate.

ICTERUS BALTIMORE (Linnæus). Baltimore Oriole.

Abundant near Matamoras; but I was too late to procure the eggs. Near San Antonio I never noticed this bird, but once saw one near Houston.

SCOLECOPHAGUS CYANOCEPHALUS (Wagler). Brewer's Blackbird.

On my arrival at Matamoras, in July 1863, I noticed this bird in the streets in company with the next species and *Molothrus pecoris*, and was told by the Mexicans that it breeds there; but it was then too late to procure any eggs. In the winter vast flocks frequented the roads near, and the streets of San Antonio and Eagle Pass; they were as tame as London Sparrows. Their note, when on the wing, is a low whistle; but when congregated in the trees, they keep up an incessant chattering.

Male. 24th October, 1863. Bill and legs black; iris pale yellow.

Female. 5th March, 1864. Bill black; legs brownish-black; iris nearly white.

QUISCALUS MACRURUS, Swainson. Long-tailed Grackle.

Very common at Matamoras, where they frequent the streets and yards, showing no signs of fear. They breed there in quantities, building a heavy nest of sticks, lined with roots and grass. I examined several nests, but found them either empty or containing young. They are fond of building in company; and in the yard of the Matamoras Hotel I counted seven nests in one tree. At Eagle Pass, and as far north and east as the Nueces River, I found them not uncommon, but never noticed any further in the interior of Texas than that.

Their usual note is a loud, not unmelodious whistle; but they have also a guttural note, which I can only compare to the sound caused by drawing a stick sharply across the quills of a dried goose-wing. When emitting this sound, they stretch their necks, erecting the feathers on the neck, spreading the tail, and half opening and shaking the wings.

The plumage of the young bird is of a dingy brown colour, exactly the same shade as that of the young bird of *Sturnus vulgaris*.

QUISCALUS MAJOR, Vieillot. Boat-tailed Grackle.

When at Houston and Galveston, in May and June 1864, I noticed several of thse birds.

? CORVUS CARNIVORUS, Bartram. American Raven.

A Raven smaller in size than, but otherwise resembling the bird I have noticed in New Brunswick, was common at San Antonio during the winter, frequenting the slaughter-houses. When in the Bandera Hills, in November 1863, several came to our camp to feast on the offal of the deer we killed. I shot one, which I now have in my collection. It may be *Corvus cacalotl*, if not *C. carnivorus*; but never having seen a specimen of the former bird, I am unable to decide with any degree of certainty.

CORVUS CRYPTOLEUCUS, Couch. White-necked Crow.

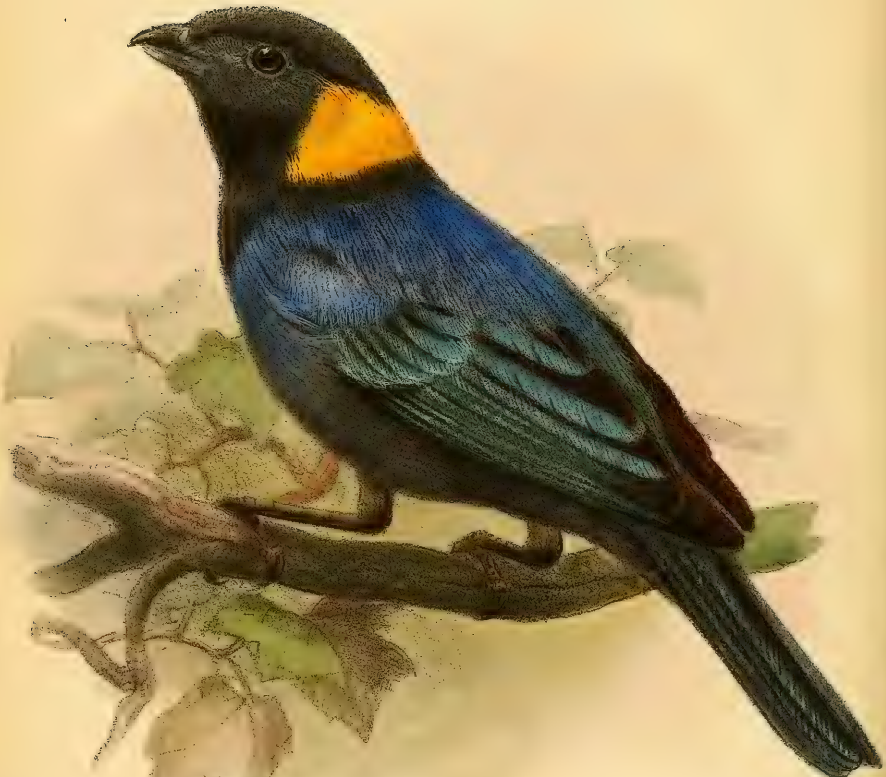
This bird came under my notice on two occasions at Eagle Pass, in March 1864.

CORVUS AMERICANUS, Audubon. American Crow.

Very common in North-eastern Texas during the whole year, but not common between San Antonio and the Mexican frontier.

? CYANURUS CRISTATUS (Linnæus). Blue Jay.

I was told by several hunters that the Blue Jay is found near San Antonio, but I never succeeded in seeing one during my wanderings. Some blue-coloured Jay is certainly found near there, but is rare. When on Buffalo Bayou, near Houston, I saw several Jays, in a grove of magnolias, which seemed to be dark ash-coloured on the back, with the head and neck, wings, and tail blue and black. They were, however, so shy that I could not succeed in shooting one.



J. Wolf del, et lith.

M & N. Hanhart imp

IRIDORNIS REINHARDTI

Xanthura luxuosa (Lesson). Rio Grande Jay.

Common on the Lower Rio Grande during the winter, but not found on the Upper Rio Grande or in Texas, excepting as a straggler from Mexico.

[To be continued.]

XXXVIII.—*Description of a new Species of Tanager of the genus* Iridornis. By P. L. Sclater, M.A., F.R.S., &c.

(Plate XI.)

Professor J. T. Reinhardt, of Copenhagen, has kindly placed in my hands for description a specimen of a very new and beautiful species of Tanager of the genus *Iridornis.* The example in question was presented to Professor Reinhardt in 1845, when at Lima, during his voyage round the world in the 'Galathea,' by Don Mariano Rivero of that city, and is now in the Zoological Museum of the University of Copenhagen. It was obtained along with some other skins on the eastern slope of the Peruvian Cordilleras. I propose to call this bird after my friend Professor Reinhardt, who has rendered such eminent services to zoology:—

Iridornis reinhardti, sp. nov. (Pl. XI.)

Pileo, capitis lateribus et gutture toto cum dorso summo nigerrimis: fascia lata cervicis posticæ, utrinque expansa, aureoflava: dorso medio, alarum tectricibus et pectore summo cæruleis, dorso postico in viridem transeunte: alis et cauda nigris, viridescenti-cæruleo extus limbatis: ventre toto cum crisso fuscescenti-nigro, viridescente-cæruleo perfuso: rostro nigro, mandibula inferiore partim albicante: pedibus obscure corylinis. Long. tota 6·3, alæ 3·2, caudæ 2·6, rostri a rictu 0·55, tarsi 0·9, poll. Angl. et dec.

Hab. Peruviæ reg. orientalis.

Mus. Univ. Hafniensis.

Sp. affinis *I. dubusiæ* et omninò ejusdem formæ, sed pileo nigro torque nuchali lato aureo facile distinguenda!

This new Tanager is of exactly the same form as *T. dubusia,* and therefore a typical member of the genus. The two remaining species, *T. analis* and its ally *T. porphyrocephala,* are, as I have observed in my synopsis of the group (P. Z. S. 1856, p. 243), rather abnormal, having the bill less compressed and more nearly resembling that of a typical *Tanagra*.

XXXIX.—*Notes on the Birds of Spitsbergen.* By Alfred Newton, M.A., F.L.S., &c.

[Concluded from page 219.]

Spitsbergen is one of those countries which has long shared the questionable privilege of being accounted the home of various birds which are either extremely rare, or have their summer retreats little known. Some of my oological readers cannot fail to have had misgivings, and these not always slight ones, that certain of their high-priced egg-treasures may not after all have been brought from the distant region which their vendors assigned to them as the land of their birth. Many such readers, I am afraid, will derive little comfort from the perusal of the latter part of these notes: but I feel sure there will be others sufficiently stout-hearted to discard at once from their collections the reputed eggs of the Knot, the Grey Plover, and I know not how many more birds, when they now find there is no reason to believe that any of these species frequent Spitsbergen. That the ornithological exploration of the country is far from being complete I of course freely admit; but at the same time it will be seen from the following catalogue of the birds hitherto observed there, that a good deal has been done towards getting an accurate knowledge of its *Ornis*, and especially with regard to the species which actually breed within its limits.

The earliest account of the ornithology of Spitsbergen with which I am acquainted is that contained in the Voyage of Frederick Marten or Martens (for I find the name spelled in both ways). This is one of those delightful old books which one cannot take up without feeling revived and invigorated by the freshness and originality of its quaint sentences. It is, of course, not free from ridiculous blunders which every schoolboy in these days could detect; but the errors and absurdities have a charm of their own, and they are all those proper to the prehistoric age, so to speak, of natural science, while the information with which they are mixed up is nearly always curious and often valuable. Of this work I have not seen the original edition, published, I believe, at Hamburg in 1675; but there is an English translation of a date not many years later now lying before me*. Seventeen species of birds are described by the author. Thirteen of them are figured by him in his plates; and these, with one more, are recognizable enough. The remaining three are the "Ice-bird" (p. 74), "John of Ghent" (p. 97), and "a Black Crow" (p. 98). The first is probably the Ptarmigan of the country, and the last may have been a *Stercorarius* in whole-coloured plumage. With regard to the second, which the Dutch now call by the same name, it must be remarked that Marten really does not include "John of Ghent" as a bird of Spitsbergen—saying that "when he cometh to the ice he turns back again"†.

Nearly a century later Commodore Phipps (afterwards Lord Mulgrave), in an appendix to the narrative of his voyage, gave a list of the twelve species of birds observed by him in Spitsbergen‡. One of these (though, as it would seem from further investigation, miscalled) is not included by Marten; but all the rest can be referred to that voyager's descriptions. "*Larus eburneus*," however, for the first time receives scientific recognition, not having been noticed by previous systematic authors.

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* An Account of several late Voyages & Discoveries to the South and North. Towards the Streights of *Magellan*, the *South Seas*, the vast Tracts of Land beyond *Hollandia Nova*, &c. Also Towards *Nova Zembla*, *Greenland* or *Spitsberg*, *Groynland* or *Engrondland*, &c. By Sir John Narborough, Captain Jasmen Tasman, Captain John Wood, and Frederick Marten of *Hamburgh*. London: 1694.

† The Gannet is of only occasional occurrence in the Norwegian seas (Wallengren, 'Naumannia,' 1854, p. 281). According to Herr Malm (Kroyer's Tidsskrift, 2 ser., i. p. 211), it appears in the winter on the coast of the Arctic Ocean; but this assertion receives no support from Pastor Sommerfelt (Œfvers. K. Vet.-Akad. Förh. 1861, pp. 67–90). The statements of Yarrell, that it "is found in the Baltic, as high as the Gulf of Bothnia" (B. B. iii. p. 384), and of Degland that it is "common on the coast of Norway" (Orn. Eur. ii. p. 384), are incorrect.

‡ A Voyage towards the North Pole undertaken by His Majesty's command, 1773. By Constantine John Phipps. London: 1774. App. pp. 186–189.

Scoresby is the next author who treats of the ornithology of Spitsbergen. In his excellent work * he enumerates seventeen species as forming its avifauna; but several of them are cer-misnamed, and especially two—his "*Fringilla linaria*" being probably, as Dr. Malmgren suggests (*op. cit.* p. 88) the young of the Snow-Bunting, and his "*Tringa hypoleucos*," with equal likelihood, the Purple Sandpiper. His "*Larus crepidatus*" is of course one of the *Stercorarii*; but which species, it is not easy to determine.

To the narrative of Parry's ever memorable fourth voyage Sir James Ross contributed an Appendix on the Ornithology of Spitsbergen †, giving twenty-one species of birds as found there. Probably only one of these (*Charadrius hiaticula*) is a real addition to the avifauna of the country as given by Scoresby. Of the other three not a trace has been found by later explorers.

Almost simultaneously with Parry's departure from the northern shores of Spitsbergen, Keilhau arrived at the southern. This distinguished geologist mentions ‡ eleven species of birds as occurring there. In his determination of one of them, *Larus marinus*, he is certainly wrong; and I hesitate much to accept his statement respecting another, *Charadrius morinellus*, an example of which he says he found lying dead on the roof of a hut at the entrance of the Stor Fjord.

In 1843 was published Admiral Beechey's account of Captain Buchan's voyage of 1818, referred to in the earlier portion of this paper. There are not many ornithological facts to be gathered from the work. *Somateria spectabilis* § is noticed (p. 100) as breeding on the islets in Fair Haven, but it is clear he did not know the difference between that bird and *S. mollissima.*

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* An Account of the Arctic Regions, &c. By William Scoresby, Jun., F.R.S.E. Edinburgh: 1820. Vol. i. pp. 527–538.

† Narrative of an attempt to reach the North Pole, &c., in the year 1827, under the Command of Captain William Edward Parry, R.N., F.R.S., &c. London: 1828. App. pp. 193–198.

‡ Reise i Œst- og Vest-Finmarken samt til Beeren-Eiland og Spitsbergen, i Aarene 1827 og 1828. Af B. M. Keilhau. Christiania: 1831, p. 163.

§ This species was said by Temminck, in 1820 (Man. d'Orn., 2 ed., p. 852), to be abundant in Spitsbergen; and the statement has been copied by many other writers. On what authority it was made, I know not.

The next published addition to the Spitsbergen *Ornis* is that of *Phalaropus fulicarius* by Mr. Wolley, who in his 'Catalogue of Eggs,' printed in 1856 (p. 17), mentions "a dried specimen" brought thence—a specimen, I may mention, which is now in my possession. In his 'Catalogue' of two years later (p. 18) he added respecting this bird, that he had "ascertained that it breeds" in that country. This information was, I believe, procured from Herr Andreas Berger (then of Hammerfest, and now or lately in the naval service of the United States of America), a most intelligent man, who had made many voyages to Spitsbergen.

Mr. Edward Evans and Mr. Wilson Sturge, in the summer of 1855, visited the west coast of Spitsbergen; and the first volume of the former series of this Journal contains an interesting notice of the birds they met with there. Among them was a large species of Goose (Ibis, 1859, pp. 171, 172) which they found breeding in Ice Sound, and inclined to believe was *Anser ferus,* but they unfortunately neglected to bring back any specimens of it. They also obtained several examples of the Ptarmigan of the country, one of which—and the only one they preserved—was subsequently characterized as new by Mr. Gould (P. Z. S. 1858, p. 354) as *Lagopus hemileucurus.*

In 1858 Professor Torell formed one of the scientific expedition organized by the Swedish Academy for the laborious survey which I have before mentioned, and on his return he published an account of the *Mollusca* of Spitsbergen*. In this he also gives a list of the birds of that country, containing two species not hitherto announced as belonging to it, namely, *Anser leucopsis* and *Harelda glacialis* †; but, as we are informed by

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* Bidrag till Spitsbergens Molluskfauna, &c. Af Otto Torell, Filos. Mag., Med. Kandid. Stockholm: 1859, pp. 47–65. I am indebted to the kindness of my friend, Mr. Gwyn Jeffreys, for an opportunity of consulting this publication.

† Temminck assigned Spitsbergen as a breeding-station for this species in 1815 (Man. d'Orn. ed. 1, p. 560). So many of the localities he gives for birds are incorrect, that I have much pleasure in mentioning this and the former instance of his statements being corroborated by later observers.

Dr. Malmgren, this last had been found in Spitsbergen in 1837 by Professor Lovén, and again in the following year by Professor Sundevall, who accompained the French Northern Scientific Expedition to Bell Sound. And here I may mention that, though a long series of volumes recording the valuable observations made by the various *savans* who sailed on board the 'Recherche' have been published, I have not been so fortunate as to meet with anything relating to the ornithology of the countries visited by them, except that in the 'Atlas' of plates published by M. Gaimard, the President of the "Commission Scientifique du Nord," half-a-dozen figures of birds, from Spitsbergen specimens, are included. These shall all be referred to under their proper heads.

I have already recorded my opinion (p. 200) of Dr. Malmgren's valuable 'Notes on the Bird-Fauna of Spitsbergen,' published in 1863, and I need not here repeat it. He has since kindly presented me with a copy of the supplementary observations which his voyage last year enabled him to make, and the results of which he published immediately on his return to Sweden*. These are characterized by the same carefulness that distinguished his former article, and the author has naturally taken the opportunity of correcting most of the few errors which that contained. In the first of his papers he adds to the list, which can be compiled from preceding authorities on the subject, four birds, *Anser segetum, Falco gyrfalco, Strix nyctea,* and a species of *Cygnus*. The Goose, as I have already stated (P. Z. S. 1864, p. 498), was in truth *Anser brachyrhynchus*; but the principal feature of Dr. Malmgren's researches is that he destroys the claims of no less than seven species, which had been proffered by former writers. Some of these I have in the last few pages particularized; to the others I shall allude as I go on. In his second paper he adds, chiefly on my authority (for I had communicated to him the fact of a *Stercorarius pomatorhinus* having been recognized by my friends in Sassen Bay), one species, and omits two others which he had previously included. Thus, according to Dr. Malmgren, the entire number known in Spitsbergen is twenty-seven, of which four are but stragglers, and the remaining twenty-three really inhabitants, one only being, so far as we dare presume, a resident throughout the year.

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* Nya anteckningar till Spetsbergens fogelfauna. Af A. J. Malmgren. Œfversigt af Kongl. Vetenskaps-Akademiens Förhandlingar, 1864, p. 377.

I do not think it necessary that I should give any more general description of this country than I have already done. I should have to copy the chief part of it from my friend's admirable paper, which those who are most interested in the matter will find, as I before stated, accessible to them at full length in the pages of the 'Journal für Ornithologie' *. I therefore proceed at once to enumerate and remark upon the birds of Spitsbergen.

1. Falco, sp.? "*Falco gyrfalco* (Linn.)," Malmgren, 1863, *op. cit.* p. 113; *Id.*, 1864, p. 411.

Dr. Malmgren mentions that on two occasions a large Falcon was observed by some members of his party. This he ascribes to *Falco gyrfalco*, though it seems to me it might just as well have been either of its cognates *F. candicans* or *F. islandicus*. I have therefore declined to give it a specific name. The first time the bird was seen, it was by Petersen (the Greenlander so well known as having taken part in many of the Franklin-searching expeditions), on the occasion of a reindeer-hunt in Wide Bay, on the 4th June, 1861, and the observation was confirmed by the harpooner. The second occurrence was in Treurenberg Bay a few days later. I can find no other record of the appearance of any of the *Falconidæ* in Spitsbergen.

2. Nyctea nivea (Daud.). *Stryx nyctea*, Malmgren, 1863, p. 114; *Id.*, 1864, p. 411.

It is stated by Dr. Malmgren that an example of this species was shot on a piece of floating ice between Verlegen Hook and Shoal Point, 10th July, 1861, probably attracted thither by the bodies of some recently killed walruses; for it has long been known, on Wrangel's authority, that the Snowy Owl is at times a carrion-eater. Three days afterwards the specimen was presented to the Swedish expedition, and it is now in the

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* A translation of the "Nya anteckningar," also from the pen of Dr. Frisch, is appearing in that journal for the present year; the first part of it in the *Heft* for May, pp. 192–216; and the continuation is promised.

National Museum at Stockholm. Whether this bird is more than an accidental straggler to Spitsbergen may be doubted, since the entire absence from that country of any *Rodentia*, which commonly form its prey, must make its means of subsistence there precarious. This is the only recorded instance of the Snowy Owl having been met with in Spitsbergen; but Stabbel, our pilot, told me he had known of its occurrence there previously,—I think he said, on the eastern coast.

3. PLECTROPHANES NIVALIS (L.), Evans and Sturge, *op. cit.* p. 170; Torell, *op. cit.* p. 49; Malmgren, 1864, p. 379. "Snow-bird," Marten, *op. cit.* p. 73, tab. K. fig. *b.* *Emberiza nivalis*, Phipps, *op. cit.* p. 188; Scoresby, *op. cit.* i. p. 537; Ross, *op. cit.* p. 193; Keilhau, *op. cit.* p. 163; Malmgren, 1863, p. 99. *Fringilla flammea* and *F. linaria*, Scoresby, i. pp. 131 and 537?

I have already mentioned the discovery of two nests of this species beneath the Alkenhorn, and that a family-party were observed on Russö. Dr. Malmgren states that when at sea in the latitude of Bear Island, on the 19th of May, in his first voyage, the rigging of the vessel was suddenly covered by a flock of Snow-Buntings, which did not stay to rest very long, but continued their course towards Spitsbergen, against a stormy wind. This bird appears to extend its range to the furthest north of the country, he having found a brood of newly-fledged young in Brandywine Bay (lat. 80° 24′ N.). The specimens I obtained seemed to be of the Old-World type; that is to say, they are not quite so large or so stoutly-built as those I have from Greenland and America. If the *Fringilla flammea* or *F. linaria* of Scoresby be not this species, I am at a loss what to make of it; for certainly it is extremely unlikely that a species of Redpoll should resort to a country so entirely destitute of anything that can be called a tree or shrub as Spitsbergen is.

4. LAGOPUS HEMILEUCURUS, Gould, P. Z. S. 1858, p. 354; Evans and Sturge, pp. 169, 170; A. Newton, P.Z.S. 1864, p. 498. "Ice-bird," Marten, p. 74? *Tetrao lagopus*, Ross, p. 193. *Lagopus alpina* var. *hyperborea*, Gaimard, Voyages en Scandinavie, Atlas, livr. xxxviii. pl.—(*descr. nulla*). *Lagopus mutus*, G. R. Gray, List B. Brit. Mus. (1844) pt. iii. p. 48, exempl. *l.*

Tetrao alpinus, pt., Torell, p. 51. *Lagopus hyperborea*, Malmgren, 1863, p. 100. "*Lagopus alpinus*, v. *hyperboreus*, Sundevall," *Id.*, 1864, p. 379.

Whether this bird be specifically distinct from the Ptarmigans of Iceland, Greenland, and Arctic America is a question that I will not, in the absence of sufficient materials, attempt to decide. The Ptarmigans from those countries are probably identical; and if so, the specific name *rupestris*, as being the oldest, should be applied to them. I am, however, very confident that the present bird resembles them more closely than it does that of Europe proper. I do not attribute much importance to the larger size of the hyperborean bird, or even to its eponymic character—the having the rectrices partly white; but the breast of the male (so far as I can judge from the specimen of that sex which was kindly shown me by Dr. Malmgren, and since described at length by him, and also from Herr von Wright's figure in the Atlas of the French Expedition) does not seem to have any of the entirely black feathers which are so distinctive of the real *L. mutus*. It is true that the last-named bird in Scotland never appears to assume the perfectly sable breast which is sometimes reached by the Norwegian "Fjäll-rype," such as is so beautifully represented by Mr. Wolf in Mr. Gould's 'Birds of Great Britain;' but Scotch birds killed at the proper time of year invariably, so far as I know, have some entirely black feathers on the breast, while specimens obtained at the corresponding season from North America, Greenland, Iceland, and I believe I may now add Spitsbergen, have not a single coloured feather which is not mottled with ashy-brown.

The Ptarmigan in Spitsbergen is not a common bird, though it has been met with in several localities on the north and west coasts. Marten found his "Ice-bird" (if that is to be referred to this species) on the shore of English Bay, where Lord Dufferin ('Letters from High Latitudes,' p. 316) subsequently mentions his having met with "two or three dozen" and killing sixteen. Parry's party found it in Hecla Cove. Professor Sundevall, who accompanied the French Expedition of 1838, obtained the example which was the subject of Herr von Wright's figure, and is now in the Stockholm Museum, in Bell Sound.

Messrs. Evans and Sturge describe it as being, in 1855, rather numerous and breeding in Coal Bay, where my companions last year searched for it in vain. Dr. Malmgren in his former voyage found it in Wide Bay, Brandywine Bay, and Loom Bay, and, as I have before mentioned, obtained the specimen I saw with him far up the North Fjord of Ice Sound.

One of the two eggs from the only nest found by Messrs. Evans and Sturge was kindly presented to me. It is rather small for the general size of the bird when compared with others of the genus, measuring 1·65 inch by 1·22, but of course is thoroughly lagopodine in character. I do not think that any other eggs of the bird have been brought from Spitsbergen.

As this Ptarmigan has been described as a distinct species, and I cannot positively prove, however strongly I may believe, that it is identical with *L. rupestris,* I have no alternative here but to consider it to have been properly separated, and I accordingly retain for it the specific name applied to it by Mr. Gould. That bestowed upon it in the French work cited, though adopted by Dr. Malmgren, must, I think, be disallowed. In the first place the figure is, so far as I am aware, unaccompanied by any description; and secondly, it was only regarded by the anonymous authority (whoever he may have been) who superintended the lettering of the plate as *a variety* of "*Lagopus alpina.*" Consequently there is no law, in any recognized code of nomenclature that I am acquainted with, by virtue of which the name "*hyperboreus*" should stand as *specific.*

5. ÆGIALITES HIATICULA (L.), Malmgren, 1864, p. 384. *Charadrius hiaticula,* Ross, p. 193; Torell, p. 56; Malmgren, 1863, p. 100. *C. morinellus,* Keilhau, p. 163?

Sir James Ross states that a bird of this species was killed by Mr. M'Cormick in Hecla Cove; and it may be inferred from what he says that General Sabine also obtained a specimen in Spitsbergen. Dr. Malmgren mentions that Professors Torell and Nordenskjöld found on one of the Seven Islands in lat. 80° 45′ N., a brood of Ringed Plovers, which had probably been bred on one of these, the most northern islets of the known world. An old bird was killed from it, and is now in the Stockholm Museum. He also states that this species is known to the

Norwegian sailors by the name of "Ringel." It was not observed by any of our party, nor seen last year by the Swedish Expedition.

Keilhau mentions a "Brokfugl * (Char. morinellus)" which he found dead on the roof of an old Russian hut in Stans Foreland; but he was no ornithologist, and I incline to believe with Dr. Malmgren (1864, p. 412) that the bird was very possibly a Ringed Plover.

? 6. STREPSILAS INTERPRES (L.).

I have already referred to an example of what was, I believe, a Turnstone seen by myself in Advent Bay on the 13th July last year; and though I admit that the principle of including in a local list any species which has not been actually procured is faulty, yet I think I can hardly in this case have been mistaken, the more so as, the very same day, Dr. Malmgren told me he was nearly sure he had also recently observed this species in the upper part of Ice Sound.

7. TRINGA MARITIMA (L.); Ross, p. 194; Gaimard, Voy. en Scand., Atlas, livr. ii. pl. —. fig. 1; Evans and Sturge, p. 171; Torell, p. 54; Malmgren, 1863, p. 101; *Id.*, 1864, p. 384. "Snite," Marten, p. 72, tab. K. fig. *a.* *T. hypoleucos*, Scoresby, i. p. 537?

This bird appears to be tolerably numerous along the coast as far north as Brandywine Bay. I am indebted to Messrs. Evans and Sturge for specimens of its eggs, which they obtained in Coal Bay in 1855: We were too late to procure any. Dr. Malmgren, on his former voyage, observed a flock on the shore of Kobbe Bay so early as the 28th May; last year he saw it in the interior of the Stor Fiord, and also met with it on Bear Island.

8. PHALAROPUS FULICARIUS (L.); Wolley, Cat. Eggs, 1855–6, p. 17; *Id.* Cat. Eggs, 1857–8, p. 18; Evans and Sturge, p. 174; Malmgren, 1863, p. 101; *Id.*, 1864, p. 384. *P. hyperboreus*, Torell, p. 54. "*P. rufus*, Sundevall," Malmgren, 1863, p. 126.

Although met with in various localities, from the extreme south to the extreme north, and doubtless breeding in many places, the exact spots selected by this beautiful species are still unknown to me. Dr. Malmgren was as unsuccessful in his first voyage as Ludwig and I were. Last year the skipper of the Swedish exploring-vessel found a nest with four eggs up the North Fjord of the Sound at the beginning of July. The contents he put in his cap; but as he was stalking deer at the time, he forgot the treasures he was carrying, and the consequence was that they were all smashed. Later in the month Professor Dunér found a nest with three fresh eggs in Bell Sound. They lay on the ground, which consisted of small splinters of stone, without any bedding. They are now at Stockholm. Neither of the parent birds was observed by the nest. Dr. Malmgren noticed this species as far north as lat. 80° 10′. He states, it feeds chiefly on a species of *Nostoc*; but the stomachs of those I dissected on Russö contained many gnats and their larvæ.

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* If I am not mistaken, "Brokfugl," in most parts of Norway, signifies *Charadrius pluvialis*.

9. STERNA MACRURA, Naum.; Evans and Sturge, p. 167; Malmgren, 1864, p. 385. "Kirmew," Marten, p. 92, tab. N. fig. *b*. *Sterna hirundo*, Phipps, p. 188. *S. arctica*, Ross, p. 194; Torell, p. 63; Malmgren, 1863, p. 101; Scoresby, p. 533; G. R. Gray, List B. Brit. Mus. (1844) pt. iii. p. 177, exempll. *g*, *h*.

The Arctic Tern is tolerably common in Spitsbergen, breeding as far as lat. 80° N., where Dr. Malmgren found it in countless numbers in July and August. In Ice Sound it was not very plentiful; but on the 15th July, Professor Nordenskjöld kindly sent me two eggs which he had himself found that day at the entrance. Among the Thousand Islands it was numerous, and the eggs are, of course, looked for by the walrus-hunters who resort thither. Old Frederick Marten mentions the excellence of their edible qualities; and the regular visitors to Spitsbergen have naturally not lost knowledge of the fact since his time, Dr. Malmgren first observed the bird between the 10th and 11th of June, in Treurenberg Bay. He states that it feeds principally on surface-swimming animals—crustaceans, mollusks, and the like. It would certainly have some difficulty to procure a sufficiency of small fish as in other countries.

10. PAGOPHILA EBURNEA (Phipps); Evans and Sturge, p. 171; Malmgren, 1864, p. 385. "Rathsher," Marten, p. 77, tab. L. fig. *a.* *Larus eburneus*, Phipps, p. 187; Scoresby, p. 535; Ross, p. 194; Keilhau, p. 163; Torell, p. 64; Malmgren, 1863, p. 102.

The Ivory-Gull, first scientifically described by Lord Mulgrave, is, of all others, the bird of which any visitor to Spitsbergen will carry away the keenest recollection. One can only wish that a creature so fair to look upon was not so foul a feeder. In my preceding notes, I have already several times mentioned this species, I have only now to add that, contrary to the experience of almost all other observers, I once saw an Ivory-Gull of its own accord deliberately settle on the water and swim. This was in the Stor Fjord. There is a very great variation in the size of different specimens of this bird, which is not at all to be attributed to sex or, I think, to age; but I do not for a moment countenance the belief in a second species, which some ornithologists have endeavoured to establish under the name of *P. brachytarsa.*

Some years ago I had the pleasure of announcing, at a meeting of the Zoological Society (P. Z. S., 1861, p. 401), that the Swedish Expedition to Spitsbergen in that year had obtained some eggs of this bird, the first well-authenticated specimens brought to Europe. I here transcribe what Dr. Malmgren, the fortunate finder of these examples, says about them:—

"On the 7th July, 1861, I found on the north shore of Murchison Bay, lat. 80° N., a number of Ivory-Gulls established on the side of a steep limestone precipice, some hundred feet high, in company with *Larus tridactylus* and *L. glaucus.* The last-named occupied the higher zones of the precipice. *Larus eburneus*, on the other hand, occupied the niches and clefts lower down, at a height of from fifty to a hundred feet. I could plainly see that the hen-birds were sitting on their nests; but these to me were altogether inaccessible. Circumstances did not permit me before the 30th July to make an attempt, with the help of a long rope and some necessary assistance, to get at the eggs. On the day just named, I succeeded, with the assistance of three men, in reaching two of the lowest in situation, which each contained one egg. The nest was artless and without connexion, and consisted of a shallow depression, 8 or 9 inches broad, in loose clay and mould on a sublayer of limestone. Inside it was carelessly lined with dry plants, grass, moss, and the like, and also a few feathers. The eggs were much incubated, and already contained down-clad young. Both the hen-birds were shot upon their nests, and are now in the National Museum. The cocks were at first observable, but they vanished when we began the work of reaching their nests."

The locality just mentioned will not be found marked on any English chart. It lies at the north-eastern entrance of Hinlopen Strait, in about long. 18° 30′ E., and was first accurately surveyed by the Swedish Expedition. I am, however, inclined to think that the Ivory-Gull breeds sporadically on many other parts of Spitsbergen proper. Several of the examples we shot both in Ice Sound and the Stor Fjord had their bellies bared of feathers, as usual in sitting birds; but I could not learn from any of the walrus-hunters we met that they had ever discovered a breeding-place, except that our pilot told me that a ship's boat which, in 1859, succeeded in reaching Giles' Land, found many Ivory-Gulls' nests on its lonely shore. This species, like other Gulls, probably does not always breed in colonies; and as it is sure to select the most inaccessible places for that purpose, an occasional nest here and there on the mountains or crags might well escape notice. Mr. Wolley, as I remarked before the Zoological Society (P. Z. S. 1861, p. 401), was told of a breeding-place which the Quæns in their language called "Porro Vaara" (*i. e.* Reindeer Hill), but I have since ascertained that this name is often applied to a considerable portion of Spitsbergen; the information therefore is less precise than I formerly thought.

11. RISSA TRIDACTYLA (L.); G. R. Gray, List B. Brit. Mus. (1844), pt. iii. p. 174, exempl. *f*; Evans and Sturge, p. 169; Malmgren, 1864, p. 387. "Kutge-gehef," Marten, p. 82, tab. N. fig. *a*. *Larus rissa*, Phipps, p. 187; Scoresby, i. p. 534. *L. tridactylus*, Ross, p. 195; Torell, p. 64; Malmgren, 1863, p. 104.

This very common bird appears to frequent the whole of the

Spitsbergen coast. In Parry's Expedition it was observed feeding on *Merlangus polaris* and *Alpheus polaris* as far to the northward as they reached—lat. 82° 45′ N. Dr. Malmgren remarks that the Kittiwake occupies a middle station on the cliffs where the Gulls breed, and that he found their stomachs filled with *Limacina arctica* and *Clio borealis.* In his voyage last year, he found it breeding also on Bear Island.

12. Larus glaucus, Gm.; Scoresby, i. p. 535; Ross, p. 194; Gaimard, Voy. en Scand. Atlas, livr. x. pl. —. fig. 2 (*pullus*); G. R. Gray, List B. Brit. Mus. (1844), pt. iii. p. 168, exempl. *f*; Evans and Sturge, p. 167; Torell, p. 63; Malmgren, 1863, p. 105; *Id.* 1864, p. 389. "Burger-meister," Marten, p. 84, tab. L. fig. *c.* *Larus marinus*, Keilhau, p. 163?

Far less plentiful, according to my observation, than the preceding species, the Glaucous Gull probably ranges along the entire coast of the country. Sir James Ross states that it was abundant on the shores of Low Island, though it was not seen to the north of lat. 81°. My friends who went to the eastward from the Thousand Islands met with many young birds, half-fledged, at one spot at least; and our pilot told me it was found breeding by the boat's crew who visited Giles' Land in 1859. Dr. Malmgren reports it as doing the same in incredible numbers on Bear Island; and we saw many in that neighbourhood both going and returning. He also remarks that it chooses (and assuredly there is no other bird in Spitsbergen to dispute its choice) the highest part of the cliffs for nidification. He further found it breeding high up on the mountain-sides, apart from any other species. In Loom Bay, he also tells us, he has seen it swoop down like a Falcon on a young Dovekie, seize it in its beak, and eat it on a projecting part of the nearest rocky cliff or shore, where many skeletons bore witness to its former rapacity. I have before mentioned that I saw a Burgomaster attack a young Bruennich's Guillemot. The plate from M. Bevalet's pencil, in the 'Atlas' to the French voyage above cited, seems to represent very fairly the appearance of the nestling Glaucous Gull.

? 13. Stercorarius pomatorhinus (Temm.). *Larus crepi-*

datus, Scoresby, i. p. 534?; *Lestris pomarinus,* Ross, p. 196; Torell, p. 64. *L. pomarina,* Malmgren, 1863, p. 116. *Stercorarius pomarhinus, Id.* 1864, p. 411.

As Dr. Malmgren remarks, Scoresby states that he observed two species of Skuas in Spitsbergen; but the name he uses for the less common kind leaves it doubtful whether he meant the Pomatorhine or the Long-tailed Skua. Ross speaks positively as to a single example having been seen during Parry's voyage. This flew past the boats in lat. 82° N. As I have previously stated, some of our party in August saw a bird in Sassen Bay, which Mr. Wagstaffe, who was present, described to me as having the form of tail which is so unmistakeably characteristic of the adult *Stercorarius pomatorhinus*; and when, between Bear Island and the Norwegian coast, we saw many examples of this species, he recognized them at once as being the same as the bird he had previously told me of. A week or two later Dr. Malmgren, on his passage home, found it equally plentiful in much the same latitude. No specimen, that I am aware of, however, has yet been procured in Spitsbergen.

14. STERCORARIUS PARASITICUS (L.); G. R. Gray, List B. Br. Mus. (1844), pt. iii. p. 167, exempl. *a*; Evans and Sturge, p. 172; Malmgren, 1864, p. 390. "Struntjager," Marten, p. 87, tab. L. fig. *d. Larus parasiticus,* Phipps, p. 187; Scoresby, i. p. 534. *Lestris parasiticus,* Ross, p. 196. *Stercorarius cepphus,* Richardson, F. B.-A. ii. p. 432, *note*? *Lestris parasitica,* Torell, p. 65; Malmgren, 1863, p. 105.

This bird is quite as common in Spitsbergen as I have seen it elsewhere, except among the Loffoden Islands. Parry's Expedition met with it on their journey over the ice, but not north of lat. 82° 2′ N. Dr. Malmgren found it breeding on the small islets near the coast, and once on the mainland. It was also, he says, very common on Bear Island. I never saw in Spitsbergen an example of the whole-coloured race or variety, on which was founded the *Stercorarius richardsoni* of Swainson; and I believe Dr. Malmgren's much greater experience is the same. He, however, remarks that the Spitsbergen specimens differ from those of Scandinavia by having a notably smaller bill, a blacker back and head, with a broad ashy-grey band across the upper part of the breast. I have not a Norwegian example with which to compare my Spitsbergen one (selected, I may say, from a good many we shot); but this latter is absolutely identical in every point that I can see, most assuredly in those specified by Dr. Malmgren, with a specimen I long ago received from the well-known Mr. R. Dunn in the Shetlands.

That the authors of the 'Fauna Boreali-Americana' were very much puzzled (as well they might be) with the different species of Skuas there can be no doubt. I think that the *S. cepphus* from Hecla Cove, described, as above quoted, as a new species, must be referred to this, the commonest of all the Skuas.

15. Stercorarius longicaudus, Vieillot. *Lestris parasitica,* Sw. and Rich. F. B.-A. ii. p. 430. *Stercorarius cephus,* G. R. Gray, List B. Br. Mus. p. iii. p. 167, exempl. *a.* *S. buffoni,* Malmgren, 1864, p. 391.

In mentioning an example of this species shown me by Dr. Malmgren, I spoke of it as "a new addition to the Spitsbergen avifauna." This is not the case. Specimens brought from that country are recorded in the 'Fauna Boreali-Americana,' and one contained in the British Museum is entered in the list published by Mr. G. R. Gray in 1844. Dr. Malmgren's bird was shot on the 12th July, near the Russian hut in Advent Bay where I first had the pleasure of meeting him. He observed the species on two other occasions, both times in Ice Sound. Whether this bird breeds in Spitsbergen I do not know.

16. Procellaria glacialis, L.; Phipps, p. 186; Scoresby, i. p. 528; Ross, p. 196; G. R. Gray, List. B. Brit. Mus. (1844) pt. iii. p. 162, exempl. *h*; Evans and Sturge, p. 168; Malmgren, 1863, p. 106; *Id.* 1864, p. 393. "Mallemucke," Marten, p. 93, tab. N. fig. *c*; A. R. Martin, K. Vetensk.-Acad. Handl. xx. tab. 3, p. 94.

This is another of the birds which were found at the northernmost latitude attained by Parry's Expedition. It is very abundant all round Spitsbergen, so far as my information goes. Dr. Malmgren found it breeding in thousands on the north side of Brandywine Bay, lat. 80° 24′ N. It breeds besides, but in smaller numbers, on the Alkenhorn, whence, as I have said, I have an egg. Dr. Malmgren was good enough to present me with an egg from Bear Island, where it also breeds plentifully*. Fulmars vary in size not inconsiderably; but I see no reason to believe in the existence of a second species, at least not in the northern hemisphere. Anton Rolandson Martin (who must not be confounded with Friedrich Marten) in 1758 visited Spitsbergen; but the only result of his voyage I can discover is a very good description of this bird and its habits, though he does not seem to have been quite clear about its synonymy†.

17. BERNICLA BRENTA, Steph.; Evans and Sturge, p. 167; Malmgren, 1864, p. 394. "Red Gees," Marten, p. 97. *Anas bernicla,* Scoresby, p. 527; Ross, p. 196. *Anser bernicla,* Torell, p. 60; Malmgren, 1863, p. 106. *A. leucopsis,* Torell, p. 60?; Malmgren, 1863, p. 107? *Bernicla leucopsis, Id.* 1864, p. 395?

In Parry's Expedition, on the 16th June, a nest of this bird, with two eggs, was brought on board from Ross Islet, lat. 80° 48′ N. —perhaps the most northern land ever visited by man. It was then also seen in large flocks about Walden and Little Table Islands. Dr. Malmgren found it breeding on the Dépôt Holm, and also on the shore of the mainland in Treurenberg Bay, the latter fact proving Prof. Torell's remark, that it only breeds on islets, to be an imperfect generalization. Messrs. Evans and Sturge, to whom I am indebted for specimens of its eggs, found it breeding on the South Cape Islands. One of our party killed a young bird, hardly able to fly, on Round Island.

As is well known, the name *Anas* or *Anser bernicla* has been applied by some writers to the Brent, and by others to the Bernacle-Goose. This confusion it was that, I suspect, led Professor Nordenskjöld to believe that he had shot the latter (*Bernicla leucopsis*) in Bell Sound in 1858. No other observer has met with this last species in Spitsbergen; and I am therefore inclined to the opinion that a mistake has been made, and that the example obtained, which does not seem to have been preserved, was only a Brent-Goose, which seems to be numerous all round Spitsbergen, except perhaps on the east side*.

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* The very limited number of breeding-places of the Fulmar forms a curious contrast to the extraordinary abundance of the species. In the British Islands, I believe St. Kilda is its only abode. About the year 1839 it was first found breeding on the Færoes, where it has since much increased, and now occupies several spots in that group of islands. In Iceland it has some four or five stations. Mr. Wheelwright states ('Ten Years in Sweden,' p. 402) that it breeds "in the islands off Norrland and Finland" [qu. Nordland and Finmark?]; but this is one of the statements he has loosely copied from Nilsson, and I doubt its truth, believing that the bird has no breeding-place in any part of the Scandinavian peninsula.

† Ludwig, who left me at Tromsö to return home, wrote me word that he saw a "Hav-hest" at Kolari, on the Muonio, just above its confluence with the Torneå, as he descended the former river.

18. ANSER BRACHYRHYNCHUS, Baillon; A. Newton, P. Z. S. 1864, p. 498. *A. ferus*, Evans and Sturge, p. 172. *A. cinereus*, Torell, p. 61; Malmgren, 1863, p. 115. *A. segetum*, *Id.* 1863, p. 107. *A. segetum* v. *brachyrhynchus*, *Id.* 1864, pp. 396, 412.

I have already mentioned that, on the 13th July, I recognized in a freshly killed Goose in Dr. Malmgren's possession an example of this species, which had previously been mistaken for others by all former observers in Spitsbergen; and I am glad to find that my friend, in his last paper, partially corrects the error he had before made. That *Anser brachyrhynchus* is a species perfectly distinct and easily recognizable from *A. segetum* no ornithologist in England now requires to learn; and I should be surprised at the scepticism shown on this point by our Continental brethren, were it not that the whole genus has been so encumbered by the invention of so-called subspecies, that the real distinctions between the independent members of it have been frittered away, leaving the nomenclature of the different European species in a very confused state.

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* It was doubtless to this species that the nest belonged which figures in a ludicrous story, told in the narrative of Lord Mulgrave's voyage by an anonymous author (Mavor's 'Collection of Voyages,' vol. xi. pp. 32, 33). A boat's crew from the 'Carcase' were sent to examine Moffen Island, when they were pursued by two bears, one of which approached very fast. The officer in command, it seems, was not distinguished for his courage, and, being very corpulent, had scarcely breath enough left to call to his men to halt. "In this critical situation he unfortunately dropped his gun, and in stooping to recover it, stumbled against a goose-nest, fell squash upon his belly into it, and had very nigh smothered the dam upon her eggs. Before he could well rise, the enraged gander came flying to the assistance of his half-smothered consort, and making a dart at the eye of the assailant, very narrowly missed his mark, but discharged his fury plump upon his nose." The men, luckily, returned and killed both his enemies, to the great relief of their commander, who does not appear to have been a shipmate of Nelson's.

In Spitsbergen the Pink-footed Goose has been met with in Wide Bay, lat. 79° 35′ N.; and probably it occurs all along the west coast. It is most numerous in Ice Sound, where, as I have said, Ludwig found a hatched-out nest, with two goslings, about midnight between the 16th and 17th July. Dr. Malmgren seems to have met with at least two nests in the upper part of the Sound, from both of which he shot the female bird. One of them, killed on the 4th July near Advent Bay, he describes fully in his last paper; and he gave one of my friends an egg from this nest, which is now in my possession. The second nest was obtained at Mittelhook, in the same Sound, on the 10th July, and the Doctor kindly presented me with a pair of its eggs. Messrs. Sturge and Evans also gave me one of the eggs they took in 1855. I have thus four very satisfactory examples of this egg, which is so extremely difficult to procure authenticated. They vary very considerably both in size and shape. According to Dr. Malmgren, the species also occurs in Hinlopen Strait and the Stor Fjord*.

The two nestlings obtained by Ludwig differ somewhat in appearance. They are both clothed in greenish-yellow down, with patches of olive on the back of the head, lore, and region of the eye, upperside of the wings, middle and lower part of the back, and the flanks; but the ground-colour of one is much darker than the other. One (the darkest) specimen, singularly enough, has on the outer edge of the middle toe and on the outer interdigital web of each foot some two or three small yellowish feathers—a fact I cannot at all explain.

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* I take this opportunity of calling attention to the fact, that we are very ignorant as to the exact species of Goose which breeds on the islets fringing the coast of Norway, from Throndhjem northwards. I have seen the birds on many occasions; but I have never been able to handle a specimen, as the localities they frequent are most jealously guarded by the inhabitants, and no guns are allowed to be used upon them. Almost all Scandinavian naturalists, excepting Pastor Sommerfelt (Œfver. Vet.-Akad. Förh., 1861, p. 86), declare that the species is *A. segetum*; but, judging from the pale grey pinions of those I have seen near me, I doubt the fact; and when I passed up the coast in 1855, I was inclined to consider it *A. ferus.* Now that I have ascertained *A. brachyrhynchus* to be the *big* Goose of Spitsbergen, I venture to suggest that it is also this which breeds on the coast of Norway, though, so far as I am aware, the species has not hitherto been recognized in Scandinavia; but that it must at least occur there is self-evident. If any of my readers should be visiting the extreme north of Norway, I would ask them to try and identify the species of Goose which breeds abundantly at Tamsö, in the Porsanger Fjord.

19. CYGNUS, sp. ?, Malmgren, 1863, p. 116; *Id.* 1864, p. 411.

A walrus-hunter assured Dr. Malmgren, on his former voyage, that two years before he had shot a Swan on a lake near the Stor Fjord; and he was also told by Captain Kuylenstierna that, in the expedition of 1861, a Swan was seen at the end of August in Advent Bay. These birds were probably accidental visitors from Nova Zembla, where, according to Von Baer, a Swan breeds in large numbers; but it is very doubtful whether the species be *C. musicus* or *C. minor*.

20. HARELDA GLACIALIS (L.); Torell, p. 59; Malmgren, 1863, p. 108; *Id.* 1864, p. 399. *Anas glacialis*, Temminck, Man. d'Orn. 1815, p. 558.

This bird is one of the few regular visitants to Spitsbergen which none of our party observed. It seems to be scarce there; but it occurs even as far north as the Dépôt Holm, lat. 80° N., where Dr. Malmgren, in his former voyage, saw a female bird. Its mate had been killed previously, and is now in the Stockholm Museum. The Doctor remarks that this specimen has the bill rather smaller than Scandinavian examples, and somewhat differently coloured. He also saw a pair in Kobbe Bay, on the 28th May, 1861, and last year on the 1st August met with a family party of five on a small pool of fresh water on one of the Horn Sound Islands.

21. SOMATERIA MOLLISSIMA (L.); G. R. Gray, List B. Brit. Mus. (1844) pt. iii. p. 141, exempl. *d.*; Evans and Sturge, p. 167; Torell, p. 57; Malmgren, 1863, p. 109. "Mountain Duck," Marten, p. 90, tab. M. fig. *c.* *Anas mollissima*, Phipps, p. 186; Scoresby, i. p. 527; Ross, p. 197. *Somateria spectabilis*, Beechey, *op. cit.* p. 100? "*Somateria mollissima* (L.), var.," Malmgren, 1864, p. 399.

Sufficiently numerous all around Spitsbergen, but becoming scarcer, according to Dr. Malmgren, towards the north. However, that gentleman, on the 15th July, 1861, observed at Shoal Point, lat. 80° 10′ N., flocks of hundreds of male birds, which seemed to be on their way *still further north*—a very remarkable fact. This species seems to be decreasing in numbers, owing to the persecution it undergoes.

Scoresby remarks on the small size of the Greenland Eiders; and, in his last publication, Dr. Malmgren has some remarks on the same subject. He gives a table showing that the dimensions of the bill in four examples from Spitsbergen are constantly less than in three from the Baltic. There is, however, no difference in the plumage of the birds from the two localities. He states that examples procured by Herr Meves on the coast of Holstein in winter resemble those from Spitsbergen more nearly in the form of the bill, but differ by being larger in body. I, unfortunately, did not bring home any Spitsbergen specimens; I am therefore unable to test these observations.

The so-called King-Duck of Beechey, as Dr. Malmgren justly remarks, is the present, and not the next species.

22. SOMATERIA SPECTABILIS (L.); Torell, p. 57; Malmgren, 1863, p. 109; *Id.* 1864, p. 401. *Anas spectabilis*, Temminck, Man. d'Orn. 2nd ed. 1820, p. 851; Schrader, Journ. f. Orn. 1853, p. 322.

This species has several times been noticed in Spitsbergen—by Professor Lovén in Ice Sound in 1837, by Professor Sundevall in Bell Sound the following year, and by Professor Nordenskjöld, who killed two examples on the south-east coast, in 1858; but it is certainly not of common occurrence there as most writers have asserted. I very much question if it breeds in the country, and it has not been met with further north than Ice Sound, lat. 76° 14′ N., where last year I believe I saw a young drake flying on July 22nd; and Ludwig, the same day, was in unsuccessful pursuit of three birds which were, I suspect, of this species. Dr. Malmgren, however, had better luck, and showed me one which was shot out of a small flock, at the beginning of the month, in Safe Haven. Another little flock was also observed by him in August on the Horn Sound Islands; but in the south-east harbour of Bear Island, on the 18th–19th June, he saw a very large flock, consisting of hundreds of ducks and young drakes, with only one or two old drakes among them all. They do not appear to breed there.

23. Colymbus septentrionalis (L.); Ross, p. 197; Torell, p. 61; Malmgren, 1863, p. 111; *Id.* 1864, p. 402. *C. glacialis*, Phipps, p. 187; Scoresby, i. p. 533.

Breeds as far as the Seven Islands, lat. 80° 45′ N. Eggs from the Dépôt Holm and other places have been obtained by the Swedes. A young bird was found by our party on one of the Thousand Islands; and I saw a pair of old ones on Russö, which had evidently a nest not far off. Thus it would seem pretty generally, though sparingly, distributed throughout the whole country. The Red-throated Diver probably feeds its young, according to Dr. Malmgren, on a species of *Apus*, which he found in plenty in freshwater pools on the Stor Fjord.

24. Cepphus mandti (Lichtenstein). "Pigeon" or "Pigeon-diver," Marten, p. 79, tab. L. fig. *b*. *Colymbus grylle*, Phipps (nec Linn.), p. 186; Scoresby, i. p. 532. "*Grylle scapularis*, Leach," John Ross, Voy. Baffin's Bay (1819), App. 2. p. li? (ex Grœnlandia). *Uria mandtii*, Licht. Verz. d. Doubletten, (1823) p. 88, no. 926; Keyserling & Blasius, Wirbelth. Europ. (1840) p. xcii; Torell, p. 62. *Uria glacialis*, Brehm, Lehrb. (1824) pp. 924, 1008. *Uria grylle*, Ross, p. 197; G. R. Gray, List B. Brit. Mus. (1844) pt. iii. p. 157 (*partim*); Evans and Sturge, p. 169; Torell, p. 62; Malmgren, 1863, p. 111. *Uria grylle* v. *glacialis*, Gaimard, Voy. en Scand. Atlas, livr. iv. pl. —; Malmgren, 1864, p. 403. *Uria grylle mandtii*, Schlegel, Rev. Crit. (1844) p. cvii. *Cepphus grylle*, A. Newton, P. Z. S. 1864, p. 495.

In 1823, as above cited, Lichtenstein described a new species of Black Guillemot, in the following words:—"*Uria Mandtii* affinis *Gryllæ*; differt potissimum remigibus secundariis multo longioribus apice albis. Rostrum gracilius, cauda, tarsi, digiti, pro mole longiores. Longit. 12½″;" and refers for further particulars to Mandt's 'Dissertatio de itinere Grœnlandico' (p. 30), a work I have not been able to see.

Now, though the keen eye of the Berlin Professor told him that the specimen before him was distinct from the *Colymbus* *grylle* of Linnæus, yet it so happened that he only caught one of the chief points really diagnostic between the two species, namely, the size of the bill and lower limbs,—his first character, drawn from the white tips of the secondaries, not being constant, as Dr. Malmgren has well shown, but arising in some cases probably from the age of the feathers. However, there exists a third and, so far as my experience goes, an unfailing means of differentiating *Cepphus mandti* from *C. grylle.* This lies in the feathers which form the conspicuous wing-spot. In the more northern form from Greenland and Spitsbergen they are *pure white at the base,* even in immature birds, while in the true *C. grylle,* from our own islands, Iceland, and Norway, with its stouter bill, these feathers are always *black at the base,* forming an entirely, or almost entirely, concealed band across the wing-spot. In *C. columba,* from Western America and Eastern Asia, we have this band much more developed, so as to be in all cases plainly visible, and towards its outer end it often becomes enlarged so as to meet the black of the anterior point of the carpus. In *C. carbo* again, and in what is perhaps another species*, the white spot entirely disappears. Thanks to Mr. J. Hancock and my friends Messrs. G. G. Fowler and Shepherd, I have had the opportunity of comparing with my own fair series of specimens from Spitsbergen a not inconsiderable number of examples of Black Guillemots from Greenland, Iceland, our own islands, and Norway. The character afforded by the wing-patch is quite constant in all these birds, according to the locality. The difference in the lengths of the bill and legs seems subject to some variation; and as I do not think any great dependence can be placed upon them, I refrain from encumbering this paper with a table of their comparative dimensions. In coming to a conclusion on this point also, I have also to acknowledge the kind assistance I have received from Mr. G. R. Gray. I here subjoin a very brief diagnosis of the four forms I have above named, taken from adult birds in their breeding-plumage.

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* I refer to a specimen in the British Museum, marked "*Uria carbo,*" but which wants the white eye-patch of that species, and is entirely black all over. This specimen was bought of Mr. Argent, and said to come from Iceland, which is just possible, since Faber speaks of an entirely black variety of *Uria grylle* from that island (Isis, 1827, p. 639). What, and when described, is "*Uria unicolor,* Benicken"? I cannot trace it back beyond a note of Brehm's (Isis, 1826, p. 988). Under the name of *Uria motzfeldi* Benicken described a Guillemot entirely black, but differing from *U. grylle* by being much larger (Isis, 1824, pp. 888, 889). The British Museum bird is much the same size as that species.

A. Macula alari alba.

(1.) *C. mandti* (Licht.), tectricibus alarum ad radices albis.

(2.) *C. grylle* (Linn.), tectricibus alarum fascia nigra celata.

(3.) *C. columba* (Cassin)* (*Cepphus columba,* Pallas, *partim*), tectricibus alarum fascia nigra conspicua.

B. Alis totis nigris.

(4.) *C. carbo,* Pallas, "orbitis albis, basi rostri alarumque cinerascente" (Zoogr. R.-As. ii. p. 350).

Mandt's Dovekie is, with the exception of *Fratercula glacialis,* the least numerous of the *Alcidæ* in Spitsbergen; but it is plentiful enough, for all that. Dr. Malmgren states that it breeds, in company with its allies, on the cliffs. The only eggs I procured were taken by one of our crew, who said they were lying on a low rock quite exposed, and not in a hole as I believe is always the case with those of our Black Guillemot; but they closely resemble those of that bird, and, from what I afterwards observed on Russö, I am inclined to think it also has the same mode of nidification. I cannot discover from Dr. Malmgren's paper which form it is that inhabits Bear Island; and this is a point to which I hope future voyagers will pay attention. A great many of the Dovekies seen about Spitsbergen have all the appearance of being barren birds; and these often have the tips of their secondaries weathered, a fact which led Lichtenstein and subsequently Brehm to regard this accidental circumstance as a real character. Such specimens also generally have dusky tips to the white feathers of the upper wing-coverts, and therefore seem to be birds of the preceding year which have not fully moulted off their nestling-plumage. The same may, no doubt, be observed in the true *C. grylle*; and in this stage of plumage, one or other of the two forms (it is impossible to say which) has been the original of Brehm's *Uria meisneri.*

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* Pallas (Zoogr. R.-A. ii. p. 349) regards the black-banded birds from the Pacific as varieties; and his diagnosis of the species is not applicable to them. His, therefore, cannot be regarded as the first description of this form; and accordingly I quote Mr. Cassin (Baird's B. N. Am. p. 912) as the authority for the same.

25. URIA BRUENNICHI, Sabine; Evans and Sturge, p. 168; Torell, p. 62. "Lumb," Marten, p. 80, tab. M. fig. *a*. *Colymbus troile*, Phipps, p. 187; Scoresby, ii. p. 532. *Alca torda*, Ross, p. 198; Gaimard, Voy. en Scand., Atlas, livr. ix. pl. —. (*adult.*), livr. x. pl. —. fig. sup. (*pullus*); Torell, p. 63! *A. bruennichii*, Malmgren, 1863, p. 111. *A. troile* v. *bruennichi*, *Id.* 1864, p. 404. *Uria arra*, G. R. Gray, List B. Br. Mus. pt. iii. p. 156, exempl. *b.*; A. Newton, P. Z. S. 1864, p. 495.

The above list of synonyms will show the difference of opinion that has existed respecting the species, which, with perhaps one exception, is the most common in Spitsbergen. That the older voyagers should be mistaken is not surprising, and even Sir James Ross may be pardoned for his error; but the same excuse cannot be made for the French *savans*, under whose direction the adult bird was figured in their 'Atlas' and miscalled *Alca torda*, a species which later investigation has failed to detect in the country.

Dr. Malmgren considers this to be the most abundant species of the Spitsbergen Ornis, and I am quite ready to yield to his far greater experience, though, for my own part, I should have given that place to *Mergulus alle*; but there cannot be much to choose between them. It breeds as far to the north as Walden Island, lat. 80° 38′ N.; but, according to Sir James Ross (who mistook it for the Razorbill), it was not seen beyond that and Little Table Island. Its food is chiefly crustaceans; but, according to Dr. Malmgren, it also lives a good deal on fish. He states that by the end of August all the breeding-places on the north coast were already deserted; and I have stated that towards the same time the birds, which had previously thronged the Alkenhorn in such countless numbers, were rapidly quitting it. To the eastward of South Cape I do not think we saw the species at all.

In his voyage last year, Dr. Malmgren found *Uria troile* breeding on Bear Island in incredible numbers, intermixed with occasional examples of the so-called *U. lacrymans*, which I quite agree with him in considering to be only a variety of the Common Guillemot. I, however, as strongly dissent from his opinion in regarding *U. bruennichi* in the same light, the differences between it and *U. troile* being, as is admitted by the great majority of naturalists, very striking. He saw this latter, breeding only on Bear Island, but is inclined to think Brünnich's Guillemot may also inhabit the more lofty cliffs there.

26. MERGULUS ALLE (L.); Torell, p. 62; Malmgren, 1863, p. 112; *Id.* 1864, p. 408. "Rotge," Marten, p. 85, tab. M. fig. *b*. *Alca alle*, Phipps, p. 186; Scoresby, i. p. 528. *Uria alle*, Ross, p. 197. *Arctica alle*, Evans and Sturge, p. 168.

This pretty little bird is, as has been said, numerous almost beyond belief on the greater part of the coast. Parry's Expedition met with it as far to the north as the party travelled, and on their return in August found it in great numbers between lat. 81° and 82° N. We did not see it in the Stor Fjord, nor did Dr. Malmgren. Its breeding-places, though at a less height than those of its allies, are still far from being easily accessible; but I have mentioned one to within a few feet of which I was able to climb and superintend the capture of the young. Mr. Lamont, in his entertaining work, 'Seasons with the Sea-Horses,' states his opinion (p. 93) that it is the mutings of this bird which produce the well-known "red snow." I do not at all agree to this; for, setting aside the fact that the cause of that singular appearance has been fully determined, and that it occurs in regions where there are no birds of the kind, the mutings of the Rotche, or Little Auk, are like anchovy-paste, while the red snow, or such of it as I saw, is of an entirely different colour, being a dull crimson.

27. FRATERCULA GLACIALIS (Leach); Stephens, Gen. Zool. xiii. pt. i. p. 40, pl. 4. fig. 2; G. R. Gray, List B. Brit. Mus. (1844) pt. iii. p. 153, exempll. *a*, *b*.; Evans and Sturge, p. 172. "Diving Parret," Marten, p. 89, tab. K. fig. *c*. *Alca arctica*, Phipps, p. 186; Scoresby, p. 527. *Mormon glacialis*, Naumann, Isis, 1821, p. 783, tab. vii. fig. 2. (head only). *M. fratercula*,

Ross, p. 198; Torell, p. 62; *M. arcticus,* Malmgren, 1863, p. 113; *Id.* 1864, p. 409.

In the former portion of my paper* I expressed my belief that this bird had been with propriety separated from *Fratercula arctica,* and promised to say more respecting the comparative dimensions of the two. This I can do in the shortest space by presenting the following Table of Measurements :—

			Longitudo rostri			Longitudo		
		Altitudo rostri ad basin.	a fronte.	ab ang. bas. maxil. infer.	a mento.	tarsi.	dig. med. cum ung.	alæ a carp.
F. glacialis	Ice Sound, Spitsbergen, July 1864.	″1·8	″2·23	″1·37	″1·6	″1·12	″1·92	″6·87
,,		1·6	2·08	1·42	1·58	1·6	1·96	6·95
,,		1·7	2·13	1·3	1·52	1·15	1·95	6·8
F. arctica...	Iceland (Mr. G. G. Fowler).	1·45	1·9	1·26	1·34	1·02	1·81	6·32
,,		1·4	2·	1·32	1·4	1·1	1·78	6·47
,,	Wales (Mr. J. Baker).	1·3	...	...	...	·97	1·68	5·66
,,		1·42	1·74	1·13	1·22	1·	...	6·22
,,		1·43	1·81	1·16	1·29	·99	1·6	5·98
,,		...	1·76	1·18	1·32	1·08	1·71	6·03
,,		1·52	1·82	1·24	1·34	·99	1·75	6·22
,,		1·46	1·89	1·27	1·37	·9	1·73	5·82
,,		1·38	1·81	1·3	1·4	·99	1·78	6·14
,,		1·41	1·82	1·22	1·34	·88	1·55	5·8
,,		1·35	1·74	1·22	1·35	·85	1·51	5·7
,,		1·41	1·75	1·18	1·32	·97	1·62	5·87
,,		1·43	1·77	1·18	1·3	·96	1·69	5·8
,,	Isle of Wight (Mr. Bond).	·95	1·67	1·23	1·27	·99	1·58	6·02

I may mention, however, that when I declared myself so strongly on the subject, I had not seen the two examples from Iceland, which I owe to the kindness of Mr. G. G. Fowler. Therefore, though still holding to the opinion I then expressed, I must admit that the case is less free from doubt than I had thought it. Of the remaining dozen specimens of *F. arctica* detailed above, eleven are adults in breeding-plumage from the coast of Wales, for the opportunity of examining which I am indebted to Mr. Baker, of Cambridge. The twelfth is the bird killed in the Isle of Wight, and recorded by Mr. A. G. More in the 'Zoologist' for 1860 (p. 6858), which, as noticed in the 'Ibis' for 1860 (p. 419), was pronounced by Mr. G. R. Gray to be an example of *F. glacialis*; but in that opinion I do not coincide. The specimen is now in the possession of Mr. F. Bond, who was good enough to allow me to make a minute examination of it.

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* I then stated I believed *F. glacialis* had not been figured. This I find to be an error, as there is a very tolerable representation of it in Stephens's work above cited. Marten's figure is, naturally, of no account; and the plate, in the 'Isis,' referred to, only shows the head—certainly, however, the most important part.

It is to be observed from the above Table, that though, in the case of one single measurement, a specimen of *F. arctica* may occasionally approach the smallest of the examples of *F. glacialis* (which, I may remark, was one picked out as the very smallest of all we shot), yet this excess seems always, except in the case of the Iceland birds, to be attained at the expense of other measurements. This fact, taken in combination with the very singular form of the bill, which is well represented in Mr. Wolf's plate (Pl. IX.), and the apparently precise geographical distribution of the two birds, induces me to regard them as distinct forms—at any rate, quite as much so as are *Loxia pityopsittacus* and *L. curvirostra*. Scoresby mentions in a note (i. p. 528) that Swainson, on comparing a drawing of a Spitsbergen with a British Puffin, "considered it as a distinct species." I do not feel so sure of the assertion of Stephens (*loc. cit.*), that the colours in the more northern bird are "more intense."

The Northern Puffin is the least common of the *Alcidæ* in the Spitsbergen waters. Indeed, when the extraordinary abundance of at least two of the other species is taken into account, it may almost be called rare. Ross, however, couples it with the last in his statement that it was found in considerable numbers on Walden and Little Table Islands; but, on the other hand, Dr. Malmgren says that this was not the case according to his experience. He saw several examples at the beginning of September near Norway and Amsterdam Islands; and in June some were shot in Treurenberg Bay. In his last voyage he also found Puffins at Bear Island, but in no great numbers. We observed them several times at a considerable distance from land; but they were most plentiful, as I have said, about Sassen Bay, some thirty or forty miles from the open sea. Dr. Malmgren states that he can see no difference between specimens from Spitsbergen and others from Iceland and Finmark, but that examples killed near Gottenburg and in the Færoes are decidedly smaller and have lower bills. These, no doubt, are identical with our British Puffins.

And now having concluded this list of the Birds of Spitsbergen, I must offer a few remarks on some other species which have been stated to occur there. Mr. Selby (Ill. Brit. Orn. ii. p. 433) ascribed it as a locality for *Alca impennis*; but that I was, by his kindness, long ago able to show in this Journal to be a mistake (Ibis, 1861, p. 376). Dr. David Walker, in his "Notes" on the Zoology of the 'Fox' Expedition *, says that *Plectrophanes lapponica* and *Colymbus arcticus* are found there; but, in the absence of any authority for the assertion, they must on negative evidence be rejected. I do not think it necessary to particularize the various species which egg-dealers have announced as breeding in Spitsbergen; their names can be easily supplied by any of my readers who will call to mind the various "British" birds whose *incunabula* we know the least of. But I must notice the very circumstantial statements of Sir James Ross, respecting *Xema sabinii* and *Rhodostethia rossi.* Not a trace of either of these remarkable birds has occurred to Dr. Malmgren, who has thoroughly explored so large an extent of the country, and especially the very localities where they are said to have been met with. He accordingly excludes them (and, I think, most properly) from his list, saying that the young of *Rissa tridactyla* was most probably taken for the first, and *Sterna macrura* for the second. Yet it is incumbent upon me to remark, because he has omitted to do so, that in the 'Fauna Boreali-Americana' (vol. ii. p. 428) General Sabine is stated to have "killed a pair" of *Xema sabinii* "at Spitsbergen," and that with regard to *Rhodostethia rossi* we have the evidence of two other independent observers. Granting, as I do unconditionally, that Lieut. Foster in Hinlopen Strait made the mistake suggested by Dr. Malmgren, we have yet the distinct testimony of Ross himself, the discoverer of this beautiful species, that he saw examples of it when on that celebrated journey over the ice—testimony moreover which is confirmed by that careful observer Sir Edward Parry himself (Narrative, &c., pp. 81, 110). Though Ross's blunder with regard to the Razorbill shows, as Dr. Malmgren truly says, that he was not a skilled ornithologist, yet it is not easy to see how he should have made such a mistake in this instance; and it may still be that this extremely rare bird inhabits the circumpolar regions, and that it really was seen on that occasion. May the question speedily obtain a solution by the organization of a properly equipped expedition to explore those solitudes!

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* Journal of the Royal Dublin Society, July 1860.

Magdalene College, Cambridge,
September 1865.

XL.—*Recent Ornithological Publications.*

1. English.

We are indebted to the kindness of Mr. G. R. Gray for a copy of his 'Catalogue of British Birds'*, the existence of which, though it bears the date 1863 on its title-page, has been, until a few weeks past, entirely unknown to us, and, we believe we may add, to almost all our ornithological friends. It would be vain to speculate on the causes which for nearly two years have kept this useful volume in seclusion. It has long been known that the Zoological Department of the British Museum received but a very scanty portion of the consideration it deserved at the hands of those who chiefly direct the whole establishment; but we never expected to find the labours of one of their oldest officers would be so entirely ignored as in this instance they appear to have been. Of the merits of the work we need scarcely speak; for all our readers are acquainted with the painstaking accuracy that distinguishes all Mr. George Gray's synonymatic catalogues; and this one is in reality a second edition of his well-known 'List,' which was printed in 1850, with such additional information as the author thinks necessary. Some slight slips there are, as, for instance, the statement (p. 244) that the White-winged Black Tern is "found in most parts of

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* Catalogue of British Birds in the Collection of the British Museum. By George Robert Gray, F.L.S., F.Z.S., &c. London: printed by order of the Trustees, 1863. 8vo. pp. 248.

England;" but, as a whole, the work is very carefully compiled, and we hope our readers will be duly thankful to us for removing the bushel which has hitherto hidden this light which they will doubtless find extremely serviceable to them.

With his usual punctuality Mr. Gould has brought out his two annual Parts of the 'Birds of Great Britain.' The following are the species of which they treat:—

Part VII.

Merlin.
Golden Oriole.
Rose-coloured Pastor.
Great Northern Diver.
Black-throated Diver.
Red-throated Diver.
Blackcap.
Garden Warbler.
Whitethroat.
Lesser Whitethroat.
Melodious Warbler.
Reed-Bunting.
Lapwing, or Peewit.
Teal.
Garganey.

Part VIII.

Hobby.
Red-throated Bluebreast.
Twite, or Mountain Linnet.
Nutcracker.
Green Sandpiper.
Jack Snipe.
Heron.
Little Tern.
Common Tern.
Arctic Tern.
Puffin.
Great Skua.
Pomatorhine Skua.
Arctic Skua.
Long-tailed Skua.

The care bestowed both on the plates and the letter-press of this grand work seems to increase with each succeeding year; and if no more of it were produced than has at present appeared, enough would have been done to place it above all the rest of the author's important publications. Profiting by recent discoveries, Mr. Gould takes occasion to illustrate the very remarkable and abnormal mode of nidification of the Green Sandpiper, which is here for the first time, we believe, represented. With reference to the last plate in Part VIII., we would, however, venture to inquire whether any of our readers have ever seen a Skua in the act of swimming? We have had some experience in observing all the European species, but we never had the good fortune to witness such a scene as that which is therein depicted.

In a series of articles bearing a title which at first sight would not be supposed to have much reference to ornithology, and published in the popular magazine called 'Good Words,' the Duke of Argyll has some considerations to which we would desire to direct our readers' attention. We do not wish to follow his Grace into the discussion of the Darwinian theory, to which he is firmly, though temperately, opposed; but among other illustrations of the universal "*Reign of Law*," in the Number for February last, the noble author adduces the principles on which the Flight of Birds is conducted, and especially gives an account of the mechanical laws appealed to in order to make the vital force effective in the accomplishment of that act. As this subject has lately been treated of in these pages, the Duke's remarks may be advantageously compared with the opinions expressed by Captain Hutton in our last Number (pp. 294–298); meanwhile we may congratulate ornithologists generally on the adhesion to their number of so calm a thinker and so agreeable a writer as the present Lord Privy Seal.

We believe that, strange as it may seem, all lovers of birds are especially lovers of the birds of prey. Mr. Brodrick's series of half a dozen beautiful plates will therefore necessarily be as much favourites with the ornithologist as they are "Falconer's Favourites"*. The species represented, being those used in Falconry in this country, have of course been often figured before; but the fidelity with which they are drawn makes them exceedingly welcome. Mr. Brodrick particularly excels in designing birds in the act of flight. No one who has seen it will forget the plunging stoop of the Barbary Falcon, in the work which he formerly illustrated; and in the present publication we have a Hobby in chase of a Skylark as truthfully represented. Next to Mr. Wolf, Mr. Brodrick must certainly rank as an artist of birds; and where violent action is concerned it is doubtful whether he does not even surpass that great draughtsman. The most scientific of our ornithological brethren may learn something from an inspection of these plates; and cold indeed must be the feelings of any man who professes to be an admirer of nature, and yet cannot appreciate their charms.

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* Falconer's Favourites. By W. Brodrick, one of the authors of 'Falconry in the British Islands.' London: 1865 (Van Voorst). Folio.

2. French.

The 'Nouvelles Archives du Muséum' include a report by Professor Milne-Edwards on some collections sent to Paris by the Père Armand David, a Lazarist Missionary at Pekin, and presented at the meeting of the Administrators on the 26th September, 1864. This report is of considerable interest, as most of the birds mentioned in it are either rare or obscure species. Chief among them are three specimens of the *Crossoptilum*, which was provisionally designated by Mr. Swinhoe (P. Z. S. 1862, p. 287) as *C. mantchuricum*, under the belief that it would prove distinct from the *Phasianus auritus* of Pallas (Z. R.-A. ii. p. 86), a belief, however, not shared by Mr. Sclater (P. Z. S. 1863, p. 118), though since entertained by Mr. G. R. Gray (P. Z. S. 1864, p. 260). M. Milne-Edwards considers it now established that the specimen obtained by Dr. Lamprey, and described by Mr. Swinhoe, is identical with Pallas's species; and consequently the old name must be retained, and the bird will stand as *C. auritum* (Pallas). It is stated that—

"Le P. Armand David rencontra pour la première fois ces oiseaux rares en juillet 1863, dans les vallées septentrionales d'une haute montagne située à une quinzaine de lieues à l'ouest de Pékin, et il constata, d'une part, que la femelle ne diffère que très peu du mâle (sa taille étant seulement un peu moindre, et ses ergots rudimentaires); d'autre part, que la livrée de noces ne diffère en rien du plumage d'hiver. Pris au collet et mis en volière, ces oiseaux se montrent doux et familiers; leur voix est variée et ressemble beaucoup à celle de la poule. Les Chinois les connaissent sous le nom de *Ho-ki* ou de *Gho-hy*."

Specimens also of Mr. George Gray's lately described *Pucrasia xanthospila* were contained in M. David's collection; and of this, as well as the last-mentioned species, figures are given. M. Milne-Edwards remarks, too, an example of a Ring-necked Pheasant from Mongolia, which has characters in common with *Phasianus mongolicus*, as figured by Mr. Gould (B. As. Part X.), and the well-known *P. torquatus*. Hence the

Professor infers that these two are specifically identical; but we would venture to suggest the possibility of there being a third and distinct, though intermediate, species. The bird mentioned by Mr. Swinhoe in our last number (pp. 349, 350) was doubtless similar to that sent to Paris by Father David. As new species, Prof. Milne-Edwards characterizes and figures *Carpodacus davidianus,* much resembling the *Fringilla rhodochroa* of Vigors (P. Z. S. 1831, p. 23) from the Himalayas, and *Abrornis armandi,* which is very similar to Mr. Blyth's *Phylloscopus viridanus* and *P. lugubris* (J. A. S., 1843, pp. 967, 968).

In the 'Bulletin de la Société Impériale d'Acclimatation' for May last, M. Rufz de Lavison, the Director of the beautiful garden in the Bois de Boulogne, has a "Note sur les Faisans acquis et à acquérir." This paper is chiefly made up of a translation of Mr. Sclater's "List of the Species of *Phasianidæ,*" from the Proceedings of the Zoological Society of London for 1863 (pp. 113–127), to which is prefixed a short historical summary respecting the three principal introductions of Pheasants to Europe,—(1) *Phasianus colchicus,* supposed to have been brought by the Argonauts; (2) *P. torquatus, Thaumalea picta,* and *Gennæus nychthemerus,* in the eighteenth century; and (3) the attempts, begun some ten years ago by the Zoological Society, and still in progress, to naturalize various other members of the family. Dr. Rufz de Lavison furnishes some very interesting particulars respecting the increasing abundance of the Common Pheasant in France; but we think he is in error when he states that, according to English ornithologists, it did not exist in this country before the year 1290, and that even in 1780 it was not found with us in a wild state; for Yarrell (B. B. ii. p. 366, *note*) quotes from Dugdale's 'Monasticon Anglicanum' an extract by which it appears that in the first year of Henry I., who began to reign in 1100, the Abbot of Amesbury obtained a licence to kill Pheasants; and that they must have been wild birds is plain, or no licence would have been necessary. It is probable that we owe the introduction of the Pheasant to the Normans, as the French are supposed to be indebted for it to the Romans.

The 'Bulletin de la Société d'Acclimatation et d'Histoire Naturelle de l'île de la Réunion,' for 1865, contains a "Note sur l'*Oxynotus ferrugineus*," by M. François Pollen, one of the Assistant Naturalists of the Leyden Museum, who dates his communication from that island, where this singular bird appears to be more common than we have reason to believe it is in Mauritius—the only other locality in which it is found: indeed, until the publication of M. Maillard's work ('Ibis,' 1863, pp. 103, 104), the best authorities thought it was exclusively confined to Mauritius. M. Pollen describes at length the different plumages of this species, which varies greatly according to age and sex, the adult male having no ferruginous in its colouring—a circumstance, we suppose, that has led Dr. Hautlaub very lately (J. f. O. 1865, p. 160) to alter the specific name of the bird from *ferrugineus* into *typicus*. M. Pollen speaks highly of the value of the services which *Oxynotus* renders to agriculturalists; but as he states that it inhabits the most impenetrable forests, we do not easily see how it often gets an opportunity to be useful to mankind. Nothing yet is known for certain respecting its manner of breeding. We should like to hear of examples of the *Oxynotus* of Réunion being closely compared with specimens from Mauritius. Some of the latter, which are before us as we write, seem not to agree exactly with the author's descriptions and figures of the former.

3. SWISS.

It is with extreme gratification that we have to announce to our readers the foundation of an Ornithological Society in Switzerland, and to acknowledge the receipt of their first publication*. There is probably no nation on the Continent with which our countrymen generally have so much real sympathy as with the Swiss, whether it springs from the mere fact that in the memories of so many of us there are agreeable recollections of pleasant holidays passed among the most glorious scenery in Europe, or from more recondite reflections on the bond of union which the enjoyment by each people of the most perfect liberty of thought and act necessarily creates. This sympathy, however arising, will assuredly not be lessened by the intelligence we now communicate to our readers. The 'Bulletin' which has been sent to us on the part of the new Society is a *livraison* of more than a hundred and fifty pages, handsomely printed in large octavo, and illustrated by three lithographic plates, two of which are coloured. It contains the following articles:—

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* Bulletin de la Société Ornithologique Suisse. Tome I. 1re Partie. Genève et Bale: (H. Georg, Libraire) 1865.

Observations sur la *Cisticola schœnicola*, par G. LUNEL.
Note sur le Bécasseau platyrhynque (*Tr. platyrhyncha*), par G. LUNEL.
Distribution verticale des Sylviadées en Suisse, par V. FATIO.
Lettres de M. LÉON OLPH-GALLIARD*.
Une colonie d'*Ardea cinerea* en Suisse, par A. FATIO.
Parus borealis, par V. FATIO.
L'Oomètre, par V. FATIO.
Le *Syrrhaptes paradoxus* en Suisse, par V. FATIO.
Analyses.
Extraits des Procès-verbaux de l'Année 1864.

We need scarcely say that several of these papers contain matter of very high interest. The first, for instance, by M. Lunel, who is Conservator of the Academical Museum at Geneva, gives a good account of the very peculiar nidification of the beautiful little Fan-tailed Warbler—the Tailor-bird of Europe. The author believes that the variation in the eggs of this species, which is quite as remarkable as in the case of those of *Anthus arboreus*, depends mainly on difference of locality.

Of the articles communicated by M. Fatio, the President of the new Society, three merit every attention. That on the vertical distribution of birds is on a subject which has hitherto been much neglected; and naturally Switzerland is an admirable country for its investigation. The author takes four localities wherein careful observations have been made; and the following is a very brief statement of the results:—

	Elevation, in mètres.	Species of *Sylviidæ*.		
		Occurring.	Breeding.	Resident all the year.
Borders of Lake of Geneva	375–500	24	21	2
The Hasli	600–700	19	16	1
Valley of Urseren	1450–1500	18	12(or14?)	0
Upper Engadina............	1700–2000	8	4	0

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* We are also indebted to the kindness of the author for separately printed copies of these Letters.

Of the two species resident near Geneva, one is the Willow-Wren (*Phyllopneuste trochilus*), the other the Redbreast (*Erythacus rubecula*), the last also being the only Warbler which never quits the Hasli. On the vexed and difficult subject of *Parus borealis*, M. Fatio goes into very minute details, and arrives at the conclusion not only that it is a perfectly good species, but also that *P. alpestris*, which is intermediate between the so-called *P. borealis* and *P. palustris*, can be distinguished from the latter, though so closely resembling it. We have never enjoyed the opportunity of comparing a series of Swiss and Scandinavian specimens; we are therefore not in a position to give an opinion on these careful investigations; but we have elsewhere expressed our belief that the type specimens of our friend M. de Sélys-Longchamps's *P. borealis* are not specifically distinct from *P. palustris* (Bree, B. Eur. iii. p. 8), a belief which has hardly been shaken by the testimony of Prof. Lilljeborg (Bree, B. Eur. iv. pp. 214–216). The "Oomètre" invented by M. Fatio is an ingenious instrument, and one which we should very much like to see brought into general use in oological descriptions, as by its means, besides the dimensions, the actual shape of an egg can be expressed so as to be intelligible to those who may not be frightened at the sight of a few (and they are only a few) algebraical symbols.

The letters of M. Olph-Galliard relate to some supposed hybrids between *Caccabis petrosa* and *C. græca*, a dozen of which were recently living in the Zoological Gardens at Lyons, and are stated to have been received from Nice. The *Analyses*, which this first portion of the 'Bulletin' contains, show that 'The Ibis' is highly appreciated in Switzerland, and appear to be extremely well executed. In conclusion, we have to offer the Société Ornithologique Suisse (among the members of which we are happy to see enrolled one of the brethren of the B. O. U.) our best thanks for this valuable contribution to the literature of our science, and our hearty wishes for their prosperity.

4. DUTCH.

The want of an index to Bonaparte's 'Conspectus' has long been painfully felt by ornithologists, since that work, unfinished as it is, has, ever since its publication, been as indispensable a *vade mecum* as Mr. George Gray's 'List of Genera,' or a 'Murray' to the British tourist on the continent. We are glad to announce, therefore, that Herr Otto Finsch, formerly Assistant in the Museum at Leyden, and now Curator of that at Bremen, has supplied this very pressing necessity, by bringing out, in a form which admits of its being bound up with the great labour to which it is a guide, such a *desideratum**. Even to those who, like ourselves, have composed or copied from some kind and more fortunate friend a manuscript index, the present work will be of great service; for not many persons, we apprehend, have taken the trouble, as Mr. Finsch has done, to give a particular reference to all the species of which Bonaparte was the first describer or name-giver; and this feature alone will be found of considerable utility.

We have before referred to Professor Schlegel's Catalogue of the *Scolopaces* in the Leyden Museum (*anteà*, p. 342). The Seventh part of that laborious and useful work†, which completes the enumeration of the group, besides containing a descriptive list of the *Ciconiæ*, *Cursores*, and *Ralli*, has now appeared. The series of *Scolopaces* in the Museum is represented by no less than 1230 skins and 50 osteological specimens of 84 species! that of *Ciconiæ* by 152 specimens of 23 species, and of *Cursores* by 749 specimens of 98 species! The *résumé* of the *Ralli*, among which Professor Schlegel comprehends the *Gruidæ*, is still unfinished. It needs not to be said that all these groups are worked out in a most painstaking manner; and, as may be gathered from the statement of the wealth of the Leyden storehouse, the Catalogue, though of course limited in its scope to such species as are therein contained, actually becomes an almost complete descriptive work of the genera and families treated, and one which is the more valuable since it is long since any such general review of these groups has been undertaken. Our space would not permit us to notice a tithe even of the numerous identifications and rectifications of synonymy which the author makes; we will here only stay to remark that he refers the *Ciconia pruyssenaeri* of Von Heuglin, described in the 'Ibis' for 1864 (p. 430), to the *Ardea leucocephala* of Gmelin (*Melanopelargus leucocephalus*, Bp., and *Ciconia biclavata*, Hodgs.). Professor Schlegel considers *Balæniceps rex* to be a Stork, and indeed, if we rightly understand his expression, would refuse to it generic distinction, including it as a *Ciconia*; but as the Leyden Museum does not seem to contain a specimen of that remarkable form, it is only incidentally mentioned.

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* Index ad Caroli Luciani Bonaparte Conspectum Generum Avium. Auctore O. Finsch. Lugduni Batavorum: 1865. (London: Williams and Norgate.) Royal 8vo, pp. 23.

† Muséum d'Histoire Naturelle des Pays-Bas, 7^{me} livraison. Leyden: 1865. (London: Williams and Norgate.)

5. Swedish.

Dr. Malmgren's 'New Observations on the Bird-fauna of Spitsbergen' being already noticed in detail in the paper on the birds of that country, contained in our present Number (pp. 500–525), we need here do nothing more than briefly record its publication, and express our thanks to its author for a copy of it.

We have received the Sixteenth part of Professor Sundevall's excellent work on the Birds of Sweden. We cannot add to the many eulogiums that have been already passed upon it in 'The Ibis,' except to say that we wish there was any chance of our own Ornis being treated in a like masterly way—barring, of course, the slow progress which the book makes.

6. American.

To our kind friend Professor Baird we are indebted for sheets 17–20 (inclusive) of his 'Review of American Birds,' the last of which bears date "20 May, 1865." Even in this limited portion of the work many new species are described; but we have before confessed our individual inability to cope with it in a critical point of view. The author has, however, now reached his 320th page: we therefore hope the first volume of it may soon be completed; and then we trust to lay before our readers a summary of the contents of that portion of this most important work.

Under the editorship of the well-known naturalist Dr. Hermann Burmeister, at present Director of the Museum at Buenos Ayres, a periodical has been commenced, to which we naturally wish all possible success. The first number of the 'Anales del Museo Publico de Buenos Aires'—for the opportunity of seeing which we are indebted, among many other acts of friendship, to our predecessor Mr. P. L. Sclater—contains only one ornithological paper. This is from the pen of the editor, and is "On the Humming-birds described by Don Felix de Azara," a group which is stated to be the least well worked out of any in that author's work. In 1847 Dr. Hartlaub published an index determining some of the species therein mentioned, but he was only able to identify two of the eleven Humming-birds to which Azara gave names. To ascertain exactly what these are is Dr. Burmeister's object; and the result of his researches is that he believes that only six species were known to Azara. These he refers as follows:—

No. 289 to *Agyrtria albiventris* (*Thaumatias albiventris*, Gould, v. pl. 301).

Nos. 290, 291 to *Hylocharis ruficollis* (*H. sapphirina*, Gould, v. pl. 342).

Nos. 292, 293, 294 to *Hylocharis flavifrons** (*Chlorostilbon phaethon*, Gould, v. pl. 354).

Nos. 295, 296 to *Lampornis mango* (Gould, ii. pl. 74).

Nos. 297, 299 to *Heliomaster angelæ* (*Calliperidia angelæ*, Gould, iv. pl. 263).

No. 298 remains a doubtful species.

XLI.—*Letters, Extracts from Correspondence, Notices, &c.*

We have received the following letters addressed "To the Editor of 'The Ibis'":—

Fort Whipple, Arizona, May 29, 1865.

Sir,—* * * "Hobbies" are queer things, but then they are such a *thesaurus* of pleasure, and never do any harm, except a little in the way of boring friends when the hobbyist will, through want of tact, ride rough-shod over other folks. For my part, my enthusiasm runs so high, that sometimes as I stand alone in the wilderness, thousands of miles from home and friends, hot, tired, dirty, breathless with pursuit, but holding in my hand and gloating over some new or rare bird, I feel a sort of charitable pity for the rest of the poor world, who are not ornithologists, and have not the chance of pursuing the science in Arizona. The most disagreeable part of my life here is the the mails, or rather the want of them. How completely isolated I am can be imagined from the fact that I have received letters from London, Paris, Washington, and Santa Fé at the same time, and all written the same day! It takes as long for one's letters to come the last few hundred miles as the same number of thousand miles through regions where steam laughs at geographical distances. "Mail," in the abstract, is the same the world over, I suppose: in the concrete, however, it varies with circumstances. Here it means a couple of men, with as many donkeys, carrying the precious little packets on one side of huge leathern panniers, and bacon and beans on the other. Civilized mails come to grief sometimes by running off the track; our mails in a different way. Thus the last one, due a week ago, came in yesterday in a fragmentary condition. A hundred Apachés had attacked it in a cañon about twenty miles from here, killed one of the men, wounded the other badly, and stampeded the donkeys. We sent out a strong party, and they gathered up the fragments; nor were they the traditional "twelve basketsful,"—hardly twelve handfuls. If there were any letters for me among the lot, they are now out there among the *Artemisia*-bushes, to be stared at by the *Lepus callotis*, Wagl., and perhaps twisted into the nests of *Poospiza belli*, Cab., or *Oreoscoptes montanus*, Baird. So they will serve one sort of ornithological purpose after all! * * * Read Woodhouse's account of "Inscription Rock." It is a grand mass of Old Red Sandstone. I clambered to its top, like Woodhouse, without my gun; and there in airy circles round my head dashed the birds he called *Acanthylis saxatilis*. They are, without doubt, the species named by Prof. Baird *Panyptila melanoleuca*; for I saw many, then and subsequently, and often within a few feet of my head. They breed on the face of the high perpendicular cliffs, gluing their nests to the sides. In the same places with them are to be seen the queer bottle-nests of *Hirundo lunifrons* and the plainer pockets of *H. horreorum*, while in the stratum of soil, usually to be found just below the edge of such cliffs, are the holes of *Cotyle*, making a cullender of the bank. *Herse thalassina*, which is very common here, eschews rocks, and is exclusively pinicoline, breeding in old Woodpeckers' holes in the dead tops and limbs of trees. Every nest I have found was on the under side of a limb. *Progne purpurea*, also very common here, is exclusively pinicoline too. A colony of them club together, and eject *Picus harrisi*, *Sphyrapicus nuchalis*, or *Melanerpes formicivorus*, as the case may be, from dead pine-tops, confiscate their homesteads, and twitter their sharp defiance from morning to night. I feel confident that *Chætura pelasgia* was a breeder in cliffs and hollow trees before chimneys came into vogue; and if ever this region of lava and pines becomes one of bricks and mortar, *C. vauxi*, *Nephœcetes*, and *Panyptila* will become "household birds."

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* Referred to *Hylocharis bicolor* in the letterpress, but corrected as above in a manuscript note.

The last novelty that has turned up is a new *Empidonax*, another new one among the host of *Empidonaces difficiles* already on record! Possibly it may be a species described from Central America; but it is nothing like any northern one. It is considerably smaller than *E. minimus*—a veritable little pygmy, so that I thought it was a *Regulus* when I shot at it. In colour above, it is like any other species—none of them differ much; but below it is everywhere (including the wing-coverts) of a fine light buff or delicate tawny—neither the yellow of *E. flaviventris*, nor the whitish, ashy, or light olivaceous of *E. trailli*, *E. minimus*, *E. pusillus*, &c. I have distinguished it in my notes and letters as *E. pygmæus*.

To my list of Arizona birds that I have in a rather disjointed way already given [*vide anteà*, pp. 157–165] I can add the following:—*Archibuteo ferrugineus*, common. *A. lagopus* (?), rare. *Buteo calurus* (?)—a large dark species with a red tail (but neither *B. borealis* nor *B. montanus*) and reddish breast, which I cannot possibly identify, being without books. *Helminthophaga* ——, the species recently described [Qu. *H. virginiæ*, Baird, B. N. Am. Atlas, p. vii. *note*, and Rev. Am. B. p. 177 ?].

Empidonax pygmæus, as mentioned above. *Icterus bullocki*; a *Pyranga*, probably *P. hepatica*, but possibly only *P. æstiva*. *Carpodacus frontalis*, very rare. *Molothrus pecoris*, common. *Mimus polyglottus*, var. *caudatus*. *Centrurus uropygialis*, rare—from the Gila valley. And here I must stop to mention a singular fact. This same Gila Woodpecker does not live on trees at all, but on the giant-cactuses—the "Saguara" and the "Petahaya" of the natives, *Cereus giganteus* and *C. thurberi* of naturalists. It digs holes into the soft stems, and feeds on the fruit and on insects. To return: *Polioptila cærulea*, as well as the commoner *P. plumbea*; *Chroicocephalus philadelphia*; *Bernicla brenta*, *Pelecanus trachyrhynchus* (these water-birds from the Gila); *Antrostomus nuttalli*, and I think also *A. vociferus*, for I have distinctly heard the three syllables, "whip-poor-will," as well as the two syllables, "poor-will." I am not sure whether I included *Pyrocephalus rubineus* in my former list; I now have a specimen. I may find other birds before I leave; but my ten months have not been spent idly, and I fear there is little more to be got here. * * * * Yours, &c.,

Elliott Coues.

Takow, Formosa, June 1, 1865.

Sir,—I was obliged to pass over the close of last month for want of time. This letter must contain my report for April and May. On the 6th of April my men rushed in with a fine old cock *Euplocamus swinhoii*. It was captured in the hills some eighty miles off, and only died the day before it reached me. It was in very good condition, but had lost a few of the maroon scapular feathers. The tail culminates for half its length, and then divides right and left, like that of a common cock, but is not so much arched. It consists of seven graduated black feathers on either side, the largest about 2·5 inches longer than the next in succession, besides one central white feather exceeding the longest black one by 3·5 inches. It is thus divided into two independent halves, overlapping each other for a quarter of its length, which is altogether about 18 inches. The bird is fully adult, its spur being ·7 inch long, a little curved and somewhat pointed. The white crest is short, nor have I ever seen it 2 inches long in the many specimens I have examined. The bill is yellowish, fading to horn-colour; the iris in the male reddish straw-colour, in the female brown. The bare face-skin is of a much deeper and richer red than in Mr. Gould's plate, and is much more developed. The smaller figure in that plate gives the best idea of its appearance. One lobe stands erect, high over the crown, another stretches back above the ear, a third extends well over the nostril, and the lower one forms a full-hanging wattle. I find, however, in live examples that the edge of the face-skin is very expansile, and that the bird has power to control its extension or contraction, somewhat similar, though in a less degree, to that which obtains in the Turkey. The legs are of as rich a carmine as in the Silver-Pheasant; the spur is nearly white, and the soles pale dingy buff. I hope before long to introduce this magnificent species to the general public at home, through the Gardens. One fine male has already gone forward, through Dr. Squire, by way of Calcutta; and I have sent several more of both sexes to Hong Kong for direct shipment. When disturbed in its cage, the bird utters a sound like "hah-sh," and ruffles up its feathers. It has also a chuckling note, chiefly uttered by the females. These are much more weakly than the cocks, and sooner succumb to fate. Among several pairs brought to me from the Tamsuy neighbourhood was one cock of a variety which the Chinese call *Aw-kak*. This has no white about it. The crest is black, the dorsal feathers are maroon, like the scapulars, and the middle rectrices are black. This specimen unfortunately escaped, and was killed and plucked by "outside Chinese" before I got hold of it again. I procured at Tamsuy a similar example; but it had more or less white on the parts where it is found in the normal form. This led me at the time to imagine that this peculiar plumage was only a stage towards maturity. According to the Chinese, the form without white is common enough. They distinguish it as a separate species, but also insist that there is a third one, which, as far as I can make out (for I have not yet seen it), would appear to be the bird in its first year's plumage. I must investigate the case further before I can speak of it with confidence.

In my last letter I advised you of the discovery of a Formosan *Chalcophaps*, and described the male [*anteà*, p. 357]. On the 18th April I procured a fine specimen of the female, which, compared with the male, might be taken for a distinct species. On the breast of this example are one or two white feathers, which may be due either to albinism or immaturity. I think, the former. It was proved to be a female by dissection. The crop was full of hard black seeds, like irregularly shaped peppercorns.

Chalcophaps formosana, ♀. Bill and legs not so brightly coloured as in the male. Forehead and an irregular streak over the eye cinereous. Crown, sides of neck, nape, and upper part of the back liver-brown, shot with a lovely purple-pink. Axillaries, edge of anterior primaries, and patch on under-quills cinnamon. Wing-coverts and tertials for the greater part of the length coppery green, or green reflecting fiery hues; some of the dorsal feathers tipped with the same, and, the brown bases being concealed, forming a nearly complete mantle. Lower part of the back blackish brown with two cross-bars (about ·75 inch apart) of finely mottled dingy white; the lower band edged with grey. Rump light chestnut-brown, bordered with blackish. Quills brown, those of the tail deeper in colour. The outer tail-feathers cinereous, with a grey-tipped broad black end; the next with the basal two-thirds rich chestnut, and a brownish extremity; the next with the chestnut less bright, and so on till the middle ones are reached, which are brown altogether. The under-parts pale russet, with the throat, cheeks, and belly paler than the rest. Length about 8·75 inches; wing 5·62 inches; tail 3·5 inches, rounded and wedged. First quill about ·4 inch shorter than the second, which is equal to the third and ·2 inch shorter than the fourth.

The other green Dove, *Treron formosæ*, was shot a few miles from here by a Chinese sportsman. It was a male; but it reached me plucked! You can imagine how wild I was. I hope, however, to get a male to describe before the warm season is over. At present the species rests on a female which I procured in 1861. From its rarity, it would appear to be a mountain bird. *Turtur humilis* is now the commonest Dove. *T. chinensis*, a resident species, is nearly as common. *T. rupicola* would appear to visit Formosa only in the winter, as it also does South China at the same season. I have one alive. Its iris is reddish orange, with a deep purplish-brown outer rim. Its note is quite distinct from that of the European Turtle; and I cannot understand why the two should be associated as simple varieties of one another. Its notes might be syllabled "kurro-kurro-coó-coó," repeated two or three times. The notes of *T. chinensis* run "koo-koo-urh-coó," while those of *T. humilis* resemble the sound of tree-branches grating together in the wind. There is, besides, a bird known to Europeans resident in China as the "White Pescadore Dove." The common belief is that it is found wild on the Pescadores; but the statement that a peculiar species occurs on that treeless group is scarcely worth contradicting. It is pure white, with pinkish bill and legs, and a straw-brown eye. There is no doubt that the bird is a domesticated albino variety of a species which, from its note, I take to be *T. risorius.* I presume this Dove came into Chinese hands by way of the Straits of Malacca. * * *

On the 18th April I observed a fine long-tailed male of *Tchitrea principalis.* A similar specimen was brought to me a few days after, dead. It precisely corresponded with the bird which, in spring and autumn, touches at Amoy on its migration to and from Japan.

On the 23rd April, a male *Podiceps minor* was brought to me. It had the corners of its mouth yellow, and the entire breast blackish, exactly as in English specimens. There can be no further doubt of our bird being identical with the European. At the same time the sportsman handed me a Leaf-walker. This is new to the Formosan list, though, from its occurring in the Philippines and in China, there was, of course, no doubt that it would also occur here. This example was engaged, with several others, in walking on the water-plants in a large pond not far from here. It is in complete summer-plumage, but its tail is not quite fully grown :—

HYDROPHASIANUS CHIRURGUS, ♂. Bill and legs lead-colour washed in places with olive-yellow. Tail of twelve feathers, the teral ones very short, the four middle long and subulate, one fitting into the groove of the other. Length 16·5 inches; wing 6·75 inches; tail 8·5 inches. This bird is considerably smaller than my specimens from the Himalayas; but it corresponds with them, feather for feather, with the exception of a black mottling on the under edge of the wing, which does not occur in any of three Himalayan examples I compared it with.

I have received a small box of birds from Consul Caine at Swatow. The most interesting were two males of the Chefoo or North China Red-legged Partridge. I have compared them with specimens of *Caccabis chukar* from the Himalayas, and find that the two are identical, except that the Chinese bird has a rather longer bill. I think we must therefore dispense with a new species on this occasion. The next in interest was a mutilated specimen of *Coturnix caineana.* The rest were the following common species:—*Otus brachyotus, Nycticorax griseus, Anthus agilis, Ruticilla aurora, Melophus melanicterus, Sturnus cineraceus, Petrocincla manilensis,* and *Halcyon smyrnensis.*

About the same time I received from Taiwan-foo a pair of Bamboo-Partridges (*Bambusicola sonorivox*). They are lighter in colour all over than Tamsuy specimens, have the wings more spotted with white, and in smaller blotches. The quills are less marked with brown, and show signs of youth, which, after all, may be the true cause of these differences.

From the mountains in this neighbourhood I have got a pair of *Oreoperdix crudigularis* (Ibis, 1864, p. 426), entirely similar to those from the Tamsuy mountains. The bright orange-red of the legs extended in these birds quite to the tip of the claws. My Tamsuy collector further brought me an egg of this species, dropped by a female which was shot. It is white and smooth, with a dingy cloudiness appearing as it were through the shell. In form it is strictly ovate, and measures 1·6 in. in length by 1·1 in. in breadth.

On the 14th May, on the hill-side, I flushed a Button-Quail, which by its peculiar manner showed that I had disturbed it either from its eggs or young. I looked about, and soon came across a young one, and shortly after three more concealed under some dead leaves. I hurried home, and, supplying myself with my gun, a cage, and some string, returned to the spot. I tied the young ones inside the cage, and, fastening a long string to the door, left a China-boy at the other end to watch for the bird. When I came back from my wanderings, I found the old one had been seen, but would not enter the cage. The young were uttering their cry, to which an angry purring sound replied from the neighbouring bushes, and out trotted the old bird, clucking like a hen, but in a lower note. It beat the sides of the basket-cage, but would not enter, and ran backwards and forwards to the bushes, calling for the chicks to follow. When my man tried to catch it in his hat, it shuffled away, seldom attempting to fly. It was then getting dark, and, rather than lose the bird, I shot it. It was the only parent in attendance on the chicks, but, curiously enough, on dissection it proved to be a male. Perhaps the female had been previously destroyed, or, what is more likely, she was hatching another brood; for the chicks had lost their down, and feathers like those of the adult were sprouting in all directions.

This is the bird I formerly referred (Ibis, 1863, p. 398) to *Turnix ocellata* (Scop.), but I had not then met with the adult. The bird from Amoy belongs to the same group as *T. maculosa*, and has been determined by Mr. Blyth as identical with his *T. blanfordi* from Moulmein. From Canton, in Capt. Blakiston's collection, I saw a *Turnix* belonging to the same group as *T. ocellata*; but, being an imperfect specimen, I could not with any certainty refer it to any of the numerous *conspecies* of that particular form. At Tamsuy I got a pair of adult birds, which I did not sufficiently examine, but I cannot help thinking that they were distinct from the Apes'-Hill bird. This, however, to my astonishment, I find to be allied to *T. maculosa*, but quite distinct from the Amoy form. It is at once to be distinguished by its strong bill; and the specimen being a male, and in adult plumage, I do not hesitate to recognize it as new:—

TURNIX ROSTRATA, sp. nov.

Bill approaching in form that of the genus *Mirafra*. General style of plumage similar to that of *T. maculosa* from Amoy. Upper parts brown, finely mottled with black; some of the striations coalescing into broad black bars, with a few pale buff spots sparsely scattered. Crown with black spots and an ill-defined median line of pale buff spots. Scapulars the same as the back, with the side feathers tinged with red. Wing-coverts light yellowish-buff, clouded with pale brown; most of the feathers barred with long deep brown or black spots. Quills hair-brown, paler at the margin and towards the tip. The carpal quill of wing-coverts broadly edged with creamy-white. Edge of wing and outer quill of wing the same, the second less so. Tail soft, and hard to distinguish. Under wing-coverts pale brown. Throat, eyebrow, belly, and thighs nearly white, some of the feathers of the two first tipped with black. Cheeks nearly white, mottled with black. Breast, flanks, and vent deep rich buff; the lateral feathers of the two first paler and yellower, with deep brownish-black bars and spots. The mottling of the plumage in many places too intricate to describe. Iris pale yellow, nearly white. Eyelid black. Inside of mouth yellowish white, washed with inky. Bill yellowish-white, with a tinge of indigo, blackish on the nostrils, culmen, and tip. Legs, toes, and claws yellowish-white, washed with indigo. Length 6 inches; wing 3·5 inches; bill, from forehead, ·58 in., from gape ·75 in., height ·25 in.; tarsus 1 inch. Wing rounded, the first five quills equal and longest.

The gizzard of this specimen was very muscular, and contained chiefly shells of a species of *Cyclotus*, peculiar, so far as I know, to this neighbourhood. The tibial tendons not at all rigid, as in most *Gallinæ*. Testes of moderate size, but soft and watery. I have reason to think there is a second species of *Turnix* inhabiting the plains, which may prove more similar to the Tamsuy species.

Returning from this walk, I was attracted, by the loud chirping of a pair of *Drymœca extensicauda*, to a *Euphorbia*-bush (vulgarly called "Takow Grass," and the commonest growth on Apes' Hill), when out flew the fledged young. I knocked one down. Its bill was yellow, bright at the gape and inside the mouth, brownish on the culmen. Feathers round the eye and eyelid bright yellow. Iris deep hazel-brown. Legs, toes, and claws light flesh-colour.

On the 15th May I was watching some Flycatchers—*Myiagra azurea.* They open their tails like fans, and flit about from branch to branch. They are very noisy birds, and have a variety of notes, which they utter in quick succession, some of them very loudly. The Chinese name for them signifies "Mango-bird."

May 18th, I received from the neighbouring mountains a pair of *Megalæma nuchalis,* just like the Tamsuy mountaineer. A few days ago, while at Taiwan-foo, I saw a living *Poliornis* in the possession of a European there. It must have been *P. poliogenys,* as it was taken in Formosa; but it was uncommonly like a specimen of *P. teesa* that I have from the Himalayas.

For some two or three days past I had heard on the hills the note of a Cuckoo, which was like the two notes of *Cuculus canorus* run into one. On the 21st of May I procured a female. It is rather small, but I have otherwise little doubt that it is the bird referred to by me on a former occasion (P. Z. S., 1863, pp. 264, 265) as a second form of *C. canorus,* which I think must now be raised to the rank of a species. This specimen is more broadly barred on the breast and sparsely on the axillaries than is the Common Cuckoo. Though a smaller bird, it has a comparatively larger bill. Its neck is barred all round; and hepatic patches occur on the wings. In proportions it approaches *C. himalayanus* of Jerdon (B. Ind. i. p. 323); but the wing of that species is 7 inches long, and its note described as quite different. In fact, Dr. Jerdon speaks of no Cuckoo having such a note as my bird. Two males were crying near the place where this female was shot. As I desire to confer on it a distinct title because of its different note, I cannot do better than call it

CUCULUS MONOSYLLABICUS, sp. nov.

To the particulars given above I may add that the iris is reddish brown, skin round the eye bright yellow, edge of eyelid black. Bill black, dingy yellowish-olive at the base. Gape and inside the mouth orange; legs fine orange-yellow, with brownish claws. Length nearly 12 inches; wing 7·75 inches; bill, from forehead, ·83 inch, from gape 1·08 inch. Tail 5·6 inches.

A female bird. The contents of the stomach were remains of beetles.

The same day I shot a female *Malacocercus taivanus.* Its bill was dull ochreous yellow, browner on the culmen. Legs lighter and dingier; claws paler still. Stomach contained remains of grasshoppers.

I must conclude with a few words on an expedition I made, on the 28th May, to Apes' Hill Bluff after Eagles. This bluff, which is about 1100 feet above the sea, is a small plateau, cut up again and again by deep chasms and small shallow valleys, overgrown with grass and scrub, and difficult to traverse. The sea-face is visited by Eagles; and I fancy a pair or two nestle on its inaccessible cliffs. I failed on a former occasion to scale the front; I now attempted to take the fortress in rear. On my way I was amused by the Monkeys (*Macacus cyclopis*), who seem to possess almost human *savey;* and in one ravine I flushed a pair of Bamboo-Partridges; but to the face of the bluff I could not attain. It began to grow late, and, despairing of having my eyes cheered by the sight of the Eagles and Falcons I should probably have found had I reached the cliffs, I turned my steps backward. A Kite or two would occasionally hover over me, enticing a shot; but I was bent upon higher game. Suddenly, on a peak before me, I descried a tall dark bird, sitting erect. I walked carelessly on, and getting within distance let drive a cartridge at him. Over he toppled. I scrambled down the ravine at the imminent risk of my neck, forced through the bushes, and, throwing myself forward, seized by the wings what I felt confident was an eagle. Judge my mortification when, turning the gasping bird to the light, I found I held a Kite! Yea, verily, an ignoble *Milvus govinda,* in its dark first year's dress,—the transparency of the air and my excited imagination having magnified it into the dimensions of an Eagle. I am, &c.,

Robert Swinhoe.

Bremen, Aug. 3, 1865.

Sir,—Perhaps you would like to publish in the next Number of the 'Ibis' a synonymical notice of some interest. The bird lately described by Prof. Peters under the name of *Cichladusa arquata* (Monatsber. d. Berlin. Akad. Wissensch., 16th March, 1863) is my *Bradyornis spekii* (P. Z. S. 21st April, 1863, p. 105); and the former name, having been published about three weeks before the latter, will of course have the priority. The only species congeneric with this singular form is the *Crateropus guttatus* of Heuglin. I am, &c.,

G. Hartlaub.

August 15, 1865.

Sir,—On the 22nd of March I stated to you that I had received a male and female of *Accipiter gularis* from Formosa (*anteà*, p. 236). The bird which I took to be the male is, I still think, an undoubted example of that species; but the specimen which I took for its female proves, on further examination, to be an immature example of *Astur trivirgatus*, agreeing exactly with an Indian example of similar age.

In correcting this error, I must apologize to your readers for having allowed it to occur; but, except as regards this specimen, I can confirm the remarks contained in my letter of the 22nd of March.

This is the first time I recollect to have seen *Astur trivirgatus* from Formosa.

I am yours, &c.,

J. H. Gurney.

Sir,—Being in Glasgow on the 22nd inst., I made inquiries at the Andersonian Museum concerning the specimen of Ross's Gull (*Larus rossi*), formerly in Mr. J. Sabine's collection (Ibis, 1865, p. 238). I regret to say that the bird is not to be found; and Dr. Scouler informs me that it has not been there since he superintended the museum. He fears that it may have been thrown away in ignorance of its value, if indeed it was included in Mr. Sabine's contribution. No list of that collection appears to have been kept, the information being in the form of labels attached to the birds themselves.

May I be allowed to add Subprovince 27 to the list of localities for *Parus palustris* in Mr. More's "Notes" (Ibis, 1865,

p. 120)? It breeds here regularly, and is by no means a rare species, although not so plentiful as *P. ater*.

I am, Sir,
Yours very obediently,
Edward R. Alston.

Stockbriggs, Lesmahagow, Lanarkshire,
25th August, 1865.

Zoological Museum, Turin,
September 7, 1865.

Sir,—In the magnificent collection of Count Turati, at Milan, I have seen a specimen of a beautiful species of *Æthopyga*, to which I propose to give the name of his lady, as a token of my great respect.

Neither this nor two other examples of the same species, which I have since seen in the splendid collection of M. Jules Verreaux at Paris, bear any indication of the precise locality which they inhabit; but of course it is India or the Indian islands. I am glad to say that M. Verreaux agrees with me in considering the species undescribed. It approaches very nearly some others of the same genus, especially *Æ. miles, Æ. vigorsi, Æ. siparaja, Æ. eupogon, Æ. chalcopogon,* and another, probably new, of which I have seen two examples in M. Verreaux's collection of Sun-birds.

Æthopyga lodoisia, sp. nov.

Mas ad. rubro-sanguinea; pileo mystacibusque splendide cyaneis in violaceum vergentibus; tectricibus caudæ superioribus rectricumque pogoniis externis splendide violaceo-purpureis; loris nigris; colli antici striga pallide flava; macula frontali rubro-sanguinea; pectore rubro-coccineo, lineolis flavis vario; abdomine cinereo-griseo; tibiarum parte infima tectricibusque caudæ inferioribus pallide flavis; uropygio flavo-citrino; remigibus tectricibusque alarum majoribus fuscis, olivaceo limbatis; pogoniis internis rectricum nigricantibus; rostro pedibusque fuscis.

Long. tot. 0·105 mm.; alæ 0·049; caud. 0·055; rostri a fronte 0·015; tarsi 0·014.

Head, neck, back, shoulders, scapulars, lesser and middle wing-coverts sanguineous; a small triangular spot on the forehead and the eyebrow same as the back; lores black; middle of the crown and stripe on each side of the neck glossy violet-blue.

Upper tail-coverts and outer webs of the rectrices shining metallic violet; rump bright sulphur-yellow; throat, fore-neck, and breast bright scarlet-carmine; on the middle of the throat a yellow line, which on the breast divides into smaller lines intersecting the red. Abdomen ashy-grey, silvery on the sides; thighs and under tail-coverts lemon-yellow; wings brown, edged with olive; inner webs of the rectrices blackish; bill horny, pale beneath; tarsi brown.

I add a short statement of the principal differences between this new species and those to which it is most nearly allied.

Æ. miles (*Cinnyris goalpariensis*, Royle) and *Æ. vigorsi* have the crown of the head and upper tail-coverts shining metallic green, not violet. *Æ. siparaja* (*Nectarinia mysticalis*, Temm.) and *Æ. eupogon*, Cab., want the yellow rump. *Æ. chalcopogon*, Reich., has the crown metallic green (*stahlgrün*) and the upper tail-coverts steel-blue. And, lastly, an *Æthopyga* (sp. non descr.), from Menado, in M. Verreaux's collection, has the abdomen almost black. I remain, &c.,

T. SALVADORI.

Feltwell Hall, Brandon,
September 1865.

SIR,—Some months ago I bought of Mr. Baker, the bird-stuffer at Cambridge, the skin of a Buzzard, which, on inquiry, I am informed was shot by J. M'Donald, Feb. 26, 1863, at Kingussie, in Inverness-shire. From him it was purchased, with a lot of Common Buzzards and other birds, by Mr. Mansfield, the well-known dealer, who sold it to Mr. Baker. The skin has been seen by Mr. J. H. Gurney and Mr. P. L. Sclater, the latter of whom tells me that it is of a young *Buteo lineatus*, a North American bird, which, I believe, has not hitherto been killed in this country.

I am, &c.,

EDW. CLOUGH NEWCOME.

Mr. Sclater sends us the following extract from a letter received from Mr. C. J. Andersson, dated Damara-land, Jan. 4th, 1865:—

"In looking over the notes made by you and the late Mr.

Strickland on my first Damara Collection*, I find you were at a loss to know whether *Irrisor erythrorhynchus* and *I. senegalensis* were identical or distinct species. If you have not decided this point yet, I may perhaps help to throw some light on the subject. Thus in my Note Book I find the following remark:—

" 'Nos. 1876, 1877, 1878, 1879. These four specimens were all killed out of one flock, consisting of five individuals, the last of which got away badly wounded. These four specimens form a most interesting series, as they exhibit all the variety of colour, spots on wings, curve of bill, extreme length, &c. &c., said to belong to both *I. erythrorhynchus* and *I. senegalensis*; and there can be no doubt but they are of the *same catch.* One specimen has the bill almost black, two have it more or less so, *i. e.* half-black and half-red, and the fourth, which I supposed to be the mature bird, has the bill quite red. All have the legs, toes, and insides of both mandibles red. In some the spots supposed to exist on the three first secondaries are present, and oval in shape, of a white colour; in others perhaps only one spot (the *red*-billed example has only *one*) is discernible. All four specimens exhibit distinctly the two kinds of curve seen in the outlines of the bill of this bird as depicted in the 'Naturalist's Library,' vol. xii. p. 117.'

"The specimens above mentioned are still in my possession, but unfortunately at the Cape, or I would give you a fuller description, or rather a description of each bird separately. Three out of the four specimens had all the indications of *immature* birds about them, whilst the parent bird was much larger, with a uniformly red bill, as had also the wounded bird which got away.

"*I. erythrorhynchus* is not uncommon in Damara-land and parts adjacent. It is always found in flocks, each flock being, apparently, a family. When they move from tree to tree (and their flight, if not disturbed, is seldom more extensive), they utter harsh garrulous notes.

"You remark on *Pelidna subarquata* that it is remarkable for the shortness of its bill; I mean as regards specimens received from this country. I have to state that the bill of this bird varies very much in length, but that the *average length* of the *full-grown* specimen is 1 inch."

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* [Contributions to Ornithology, (1852) p. 154.—Ed.]

In a letter dated June 2, 1865, Dr. von Frantzius, so well known for the numerous new species of Costa Rica birds discovered by him, writes as follows to Professor Baird respecting *Tetragonops frantzii*, described and figured in 'The Ibis' for 1864 (p. 371, Plate X.):—

"After much labour I have at length succeeded in obtaining another specimen of the new *Tetragonops*, and, indeed, from a new locality, the foot of Turrialba, near Birris or Cervantes. The bird is there called "*Galinilla*," because its cry resembles that of a chicken. It lives socially in flocks, and is said to be especially abundant in June."

At the recent Meeting of the British Association for the Advancement of Science at Birmingham a letter was read in Section D (Zoology and Botany), from Mr. Edward Newton, relating to a "Remarkable Discovery of Bones of *Didus* in the Island of Rodriguez." These bones were sent to that gentleman by Mr. George Jenner, the magistrate of Rodriguez, whom Mr. E. Newton had requested to carry on researches in the caves visited by him last year (*anteà*, p. 152). Among the bones there were remains of a great many individuals, apparently all of one species, but of two sizes, the difference being probably owing to sex. The most plentiful bones were tibiæ, of which there were one or two quite perfect, with the antero-proximal ends well preserved. There were also several very good femora and metatarsi, portions of three or more pelves, the anterior end of a coracoid, several humeri, an ulna, and two radii, and a phalanx of the middle toe. Of these the upper end of the tibia, the portions of the pelvis and of the coracoid, the ulna, radius, and phalanx are bones which appear not to have been found before, and their discovery is therefore a matter of very great interest. These specimens have since arrived in England, and being now in our hands we can confirm the particulars above given. We shall take an early opportunity of exhibiting them at a Meeting of the Zoological Society; for certainly no such large series of the bones of any species of Dodo has ever before been collected. We need not, however, say more here on the subject, except to remark that an inspection of the specimens would seem to induce the opinion that after all the *Didus nazarenus* of Mr. Bartlett and the *Pezophaps solitarius* of Strickland are only the opposite sexes of one and the same bird —a very singular fact when the great difference in the size of the specimens is taken into consideration. We are glad to say that, at the instance of Mr. P. L. Sclater, the British Association has voted a liberal sum of money to continue the researches thus commenced with so much promise.

At the same Meeting of the British Association the Committee on Zoological Nomenclature, which was appointed in 1862, presented a Report which recommended the adoption of a Code of Rules, differing in only one respect of any great importance from that formerly compiled by the late Mr. H. E. Strickland. This Report having been first discussed at some length in the Committee of the Section, was read in the Section, and the Code of Rules as recommended, being formally put to the Meeting, was unanimously adopted, and copies of it ordered to be printed for circulation among zoologists both at home and abroad. We shall probably have more to say on this subject hereafter.

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